

**Boldness by Design Initiative II: Enrich Community, Economic and Family Life
Recommendation #1**

Advance Extension for a World Grant University

Summary

A new vision for a world-grant university demands a strategic model of Extension and Outreach/Engagement that integrates scholarship of faculty and students with communities and families for application, learning and discovery. Extension has established a unique network in every Michigan county of programs/projects addressing local problems and community objectives. To effectively address contemporary social concerns, Extension must address global transformations in our economy, workplaces, information and opportunities by bringing science-based knowledge to partnerships with Michigan communities, families and businesses. Michigan economic development calls for commercialization of MSU's new intellectual property through improved infrastructure (i.e., technology shepherding and transport management of new and existing innovations) as well as taking advantage of new opportunities in technology, communication and marketing. As Michigan shifts to a global climate, an Extension for the future must focus on underserved, urban and rural populations and will link with K-12 and community college education systems and communities to prepare all Michigan youth for tomorrow's jobs. A tremendous opportunity exists to integrate service learning with Extension's presence and programs across Michigan.

Goals

- Identify new constituent groups among underserved and urban populations.
- Enhance visibility and presence of MSU in each county through direct contacts between campus researchers and students and these constituent groups.
- Create a university culture for community involvement – a culture based on blending community and university needs and knowledge.
- Integrate a global component in all Extension programs.
- Focus on use of a range of information technology and communications to develop global understanding of society, economies and businesses.
- Establish professional development for Extension and Outreach/Engagement to adapt to changing economies and to ensure effective involvement in new initiatives such as biomass economic development.
- Expand commercialization and development efforts based on MSU innovation, technology and know-how transfer.
- Reward and give credit to faculty for Extension activities and community-based scholarship

Metrics

- Increase FTE of MSU faculty across all colleges involved in Extension.
- Increase number of MSU students involved in Extension.
- Increase number of international Extension staff, faculty, students and programs.
- Parity in Extension funding for underserved populations.

- Parity in Extension funding across program areas (families, communities, food, environment, economic development).
- Increase Extension staff and faculty grants and contracts.
- Increase technology marketing capabilities through a customer-oriented, market-driven technology transfer program.
- Increase use of media (PSAs, Internet, radio) to market MSU expertise, new breakthroughs and innovations.
- Number and diversity of community organizations served by Extension and Outreach/Engagement.
- “Globalization” of Extension and Outreach/Engagement programs.
- Incidence and scope of MSU faculty and students involved in Extension scholarship and programs.
- FTE of faculty involved in global programs with Extension.

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Recommendation #2**

**Promote Community Service Through Academic Service Learning and
Civic Engagement**

Summary

The famous American patriot, Nathan Hale, said: “I wish to be useful, and every kind of service necessary to the public good becomes honorable by being necessary.” If furtherance of Hale’s observation about civic responsibility, and in recognition of the support our university can provide to the community as a whole, the Committee to Enrich Community, Economic, and Family Life has determined to propose an initiative promoting student involvement in a wide range of community issues. This proposal couples the community’s need for volunteers with educational opportunities for students. Students seeking real-world experience will have an opportunity to develop personal, professional and leadership skills in a host of academic, professional and business environments. With the assistance of the Center for Service Learning and Civic Engagement, the university can bring its student population to bear on important community projects while providing a rich student experience that educates our future citizens to advance our values.

This initiative would encourage authorized faculty from each MSU undergraduate college to establish or expand their service-learning course offerings. Academic service learning options may include, but are not limited to, participation in the following areas: public service, such as mentoring or tutoring students in K-12 classrooms; completion of internships; or faculty-supervised research. This initiative emphasizes one of the strategic imperatives of the Boldness by Design initiative: “Enrich community, economic and family life through research, outreach, engagement, entrepreneurship, innovation and diversity.”

Goals

Currently six colleges offer a total of 103 service-learning courses to undergraduate students. Approximately one-third of MSU undergraduate students are actively involved in at least one of these courses. It is our hope that within five years at least two-thirds of the student population will be active in at least one course.

Metrics

Number and proportion of students incorporating active learning options (e.g., internships, faculty-supervised research).

Number of course sections with a service-learning component.

Number of faculty involved in teaching courses with a service-learning component.

Number of undergraduate students participating in service-learning.

- Academic service-learning
- Volunteerism

Proportion of undergraduate students participating in service learning.

Number and diversity of community organizations served by service learning.

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Strategic Approaches to Community Engagement

Summary

Establishing scholarship-focused, campus-community partnerships is consistent with Michigan State University's land- and global-grant mission. Applied research partnerships should be focused on specific projects so that there are reasonable expectations that strong and sustainable community outcomes can be maintained. Teaching-learning partnerships should result in measurable outcomes for community partners, and should lead to more effective instructional models, particularly involving e-technologies. Programs advancing arts and humanities teaching, scholarship and programming in public places should be energized. MSU's regional stewardship perspective draws attention to the interconnectedness of programs advancing community, economic development and family life.

Goals

Short-term goals. Enhance, evaluate and monitor MSU's regional stewardship networks in targeted communities and develop guidelines for expansion. Create effective research and teacher/learner collaborations and campus-community partnerships focusing on issues that have the potential to result in sustainable positive outcomes. Consider new partnerships with community colleges on issues related to translating knowledge to practice and knowledge dissemination through teaching/learning environments.

Long-term goals. Help promote research, creative activities and teaching/learning networks that link MSU Outreach and Engagement, MSU Extension, and MSU's cross-cutting interdisciplinary initiatives, both internally as well as with external audiences. Expand the scholarship-based approach to community engagement throughout the institution. Continuously evaluate the effectiveness of MSU campus-community partnerships. Track benchmarks annually to provide indicators to inform strategic planning processes.

Metrics

Evidence of MSU's regional stewardship through annual reporting of indicators of economic development. Such indicators might include: participation in commercialization startups, revenue growth from licensing, number of patents generated, and Michigan companies economically benefiting from MSU-generated products.

Evidence of MSU's faculty and academic staff involvement in regional, national and international engaged scholarship. Such indicators might include: the reach of MSU expertise into priority areas of the state, number of faculty involved in MSU engagement activity in Michigan, number of campus-community partnerships demonstrating enhanced quality of life for Michigan's families, and amount of extramural support generated for campus-community partnerships.

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Public Policy

Summary

Michigan State University has a long history of scholarship relating to public-policy issues. MSU also has a long history of public-policy engagement with the public, and with decision makers at the local, state, national, and international levels. However, it is now more important than ever that research universities maintain and enhance their public-policy scholarship and engagement at all of these levels.

Goals

One important goal is to *increase public awareness* of the public-policy work being done at MSU. Academic units and individual faculty members should be encouraged to publicize their work in public policy. Additional resources should be devoted to the dissemination of research findings with public-policy implications. Publication of such research findings in peer-reviewed journals is crucially important, but the university should also encourage and facilitate the efforts of faculty members to disseminate their findings through other outlets, with the goal of reaching the widest possible audience.

A *comprehensive inventory* should be conducted, as a first step toward increasing public awareness of the public-policy work that has been done and is being done at MSU. The goal of the inventory would be to bring together information regarding the efforts of all MSU faculty and staff in the public-policy area.

Currently, public-policy research at MSU is conducted in a large number of units. Researchers in different units do not necessarily communicate well with each other. MSU should take steps to *enhance communication among public-policy researchers across the university*. Our efforts to increase the extent to which the wider community is aware of our public-policy work will be strengthened, if we can build a more effective system of communication within the University.

When an MSU researcher speaks out on a public-policy issue, there is sometimes uncertainty about whether the researcher is speaking as a private citizen, an officer of the university, or in some other capacity. The MSU community needs to engage in a discussion of this issue. The goal of the discussion should be to reach a consensus that would *clarify the circumstances under which researchers should qualify their statements*, by indicating that their views do not necessarily represent those of their academic unit, or the university as a whole.

Another important goal is to *increase the amount of public-policy-oriented research* done at MSU. Additional funding and other means of support should be used to encourage public-policy research. An effort should be made to augment support for public-policy research in a wide variety of areas, covering issues of local, state, national, and international concern.

There are close connections among the goals articulated here. The effort to increase public awareness of MSU's public-policy research will become ever-more important, as the amount of public-policy research increases.

Metric

The number of instances of MSU faculty and staff giving public-policy advice or testimony, or participating in policy-relevant conferences.

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Recommendation #5**

Advance the Emerging Bio-Based Economy in Michigan

Summary

Renewable resource technologies can reduce dependence on fossil fuels, permitting the petroleum economy to be supplemented (and perhaps superseded) with a bio-based economy. MSU possesses growing strength in “green” products and renewable resources. Today, for example, licensees of MSU’s biomass intellectual property are:

- manufacturing water soluble blown foam from corn starch as a polyethylene substitute in packaging and insulation,
- synthesizing shikimic acid – a precursor of the anti-influenza drug Tamiflu® -- using genetically engineered bacteria and biomass,
- optimizing the treatment of lignocellulose biomass with ammonia fiber explosion (AFEX) techniques,
- recovering glycols for use as antifreeze, de-icers, and industrial solvents from corn by-products,
- exploring succinic acid and succinate esters derived from corn and wheat as cost effective commodity chemical precursors for plastics in automotive applications,
- exploring biodegradable plastics production via plants genetically engineered to produce polyhydroxybutyrate & polyhydroxyalkanoates.

Current MSU invention disclosures also target renewable resource pathways to biodiesel fuels, highly energetic chemicals for defense applications, pharmaceutical intermediates, and biocomposite and nanofiber materials.

Although Michigan is not currently a leader in the deployment of bio-based fuels, the opportunity exists for the state to “leap-frog” a biofuels emphasis and earn a national and international position of leadership in the broader post-petroleum bio-based economy. Utilizing crop and forest biomass, MSU should seek to promote Michigan use of economical and environmentally benign specialty, commodity, and foundational chemicals and advanced materials derived from biomass, while enhancing state competitiveness in the biofuels area.

Goals

- Conceive, develop, and test new bio-based products, processes, and jobs.
- Using MSU Extension, Michigan Agricultural Experiment Station, and other campus expertise and leadership, connect our strong agricultural, forestry, and natural resource sector with our extensive industrial and manufacturing sector to advance a new, sustainable bio-based sector.
- Meet the growing market demand and environmental imperative for renewable, easily recyclable sources of materials, chemicals, and energy.

- Accelerate the growth of Michigan's bioeconomy through technology transfer.
- Through education of students and re-training of existing workers, ensure that the Michigan bioeconomy is nationally and internationally competitive in its human resources.
- Capitalize on Michigan's potential to lead this emerging economic sector nationally.

Metrics

- Competitive successes in peer-reviewed bioeconomy grant and contract activity, including Federal and Michigan 21st Century Jobs Fund competitions.
- Increased bioeconomy-related invention disclosures, patents, and licenses.
- Number of students and trainees taught, following development and delivery of a broad bioeconomy-related education and training curriculum within three years.
- In-state job placements of students and trainees taught.
- Number of new bioeconomy partnerships formed, demonstration sites established, incubators facilitated, and plant launches assisted, statewide.