

**Area Of Expertise Teams:**

**The Michigan Approach to Applied Research and Extension**

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#### **Introduction**

Agricultural Experiment Stations and the Cooperative Extension Service have a long history of contributing to the economic, social, human and environmental capital of the United States. Despite this fact, these two institutions in recent years have experienced declining federal budget support and increasing competition for resources (Knutson and Outlaw, 1994; Hamm, 1996; Paarlberg, 1992; Hood and Schutzer, 1990). Additionally, Agricultural Experiment Stations have been criticized for not being system oriented and Cooperative Extension Services have been criticized by stakeholders and members of the university community as reflective of a by-gone era and not likely to meet the future needs of an information society.

Linking Extension and research functions has been a considerable challenge to land-grant institutions. In this paper, an argument is made that a seamless interface between Extension and research is the key to meeting the future needs of an information-based society and that self-directed work teams have potential to make the seamless interface possible.

Michigan State University Extension, in partnership with the Michigan Agricultural Experiment Station, has implemented self-directed area of expertise (AOE) teams as its major educational development and delivery model (Leholm et al., 1998). These AOE teams are an outgrowth of our experiences with previous temporary research/Extension teams and quick response professional groups that operated within

traditional line responsibilities for research and Extension units. The AOE teams are different from those teams and group efforts of the past in that they are a continuing means of defining priority. These AOE teams are more permanent in their life span; more self-directed in their operation; more tightly linked with public leaders and groups; more integrative of research demonstration, education design, delivery and evaluation; more dedicated to enhancing their knowledge skills and capacity; and more empowered with resources.

All support systems-including staff development, personnel, budgets, communications, technology and evaluation-were redesigned to serve the educational programming needs of the self-directed teams. Administratively directed program areas in Extension were eliminated, and their operating budgets were invested directly to the AOE teams.

A coalition structure replaces the traditional administrative oversight and direct-line management from college, departments and Extension program areas. The coalitions are composed of department chairpersons, the Experiment Station and Extension directors, and selected leaders, who operate as a group to seek resources for the AOE teams and to assess and encourage their performance. Together, the creation of a full range of AOE teams across the research and Extension mission and creation of the coalitions bring our research and Extension into the most direct relationship with needs, opportunities and expectations of Michigan citizens.

### **Self-directed Teams**

The concept of self-directed work teams evolved out of a need to improve organizational performance in both the private and public sectors. Traditional vertically

and hierarchically structured organizations have been considered too slow and cumbersome in responding to changing conditions and competition (Fisher, 1993; Orsborn et al., 1990; Deeprose, 1995). Such organizations often lacked innovation and creativity and often failed to take advantage of perspectives, experiences and creativity of employees providing products and services to clients.

Self-directed work teams have emerged in recent years as a solution to these deficiencies. The self-directed work teams place decision-making and problem-solving authority in the hands of the persons closest to the product or services being created and provided (Willins et al., 1991; Orsburn et al., 1990; Quick, 1992). In private sector companies where self-directed work teams have been creatively employed, product/service and market improvements have been achieved, productivity has been enhanced and customer satisfaction has resulted. Other benefits have included enhanced quality, cost reduction, innovation, better use of employee's talents and organizational responsiveness to change. Typically, there has been a companion change in company organizational/administrative structure and operation as well—from management of predefined tasks and processes to support of team problem solving and improvement.

Literature on organizational development suggests that the self-directed work team approach is very beneficial to Extension-type organizations. It enhances staff motivation and retention, develops the organization's credibility with stakeholders, provides a larger pool of skills from which to draw statewide, allows programming on current issues, supplements but does not replace the role of specialists, increases networking among staff members and increases organizational self-esteem.

During the past four years, Michigan's Extension and Experiment Station have undergone both operational and structural changes. Today, educational programs are planned and delivered through self-directed work teams of Extension educators and Experiment Station researchers popularly known as area of expertise teams. AOE teams are connected by technology and empowered by their own leadership.

At Michigan State University, an AOE team is a highly trained group of Extension and Experiment Station employees fully responsible for planning, implementing and evaluating educational programs in a self-directed manner. Most teams have 10 to 20 members, with every member of the team sharing responsibility for performance. Team members develop a specialty through a series of in-depth training and educational opportunities and integrate knowledge from several disciplines. Recognition and compensation are increasingly linked to team performance.

Among the Extension educators on AOE teams are both university faculty members with statewide Extension/research responsibility and Extension agents who have a county or multicounty responsibility. Trades for expertise among AOE teams allow for both agent specialization and diverse program coverage.

Within Michigan State University, the AOE teams were formed as a result of external demands from stakeholders and internal recommendations from the 1992 Empowerment Committee of Michigan's Council of Extension Agents (Guikema, 1994). The field crops, livestock and dairy AOE teams were launched in early 1994. The AOE approach was expanded in 1995 to include teams for children, youth and families, and community, natural resources and economic development. The AOE teams address issues in rural, urban and metropolitan environments.

A total of 18 teams now operate across the mission of Extension and the Experiment Station. Current AOE teams target dairy, livestock, fruit, vegetables, ornamental and landscape plants, field crops, farm/firm management, land use, forestry, water quality, community development, economic development, state and local government, tourism, leadership development, family strengths, youth development and 4-H, and food, nutrition and health.

### **AOE Implementation in Michigan**

The AOE teams were formed as a result of stakeholder demand. Michigan stakeholders were asked, "What would characterize an exemplary 21st century Extension Service?" They responded by stating they want a quality, cutting-edge educational product from Extension and the Experiment Station that is timely and customer-focused with a multidisciplinary systems approach to problem solving (Hathaway et al., 1994). Stakeholders do not distinguish Extension programs from research programs.

Michigan responded by enthusiastically involving its stakeholders in the design and implementation of customer-focused, self-directed AOE teams. As an initial action, some "boundary conditions" were established for the organization and operation of AOE teams. The boundary conditions suggested for use by AOE teams were:

- AOE teams have co-chairs; one from the campus and another from off-campus. The on-campus co-chair has a joint research-Extension faculty appointment or responsibility.
- AOE teams develop their own micro-vision, mission and operating procedures.
- AOE teams have an interdisciplinary, problem-solving, customer-oriented focus.
- AOE teams develop a plan for program delivery and curricula for staff development.
- Involvement of stakeholders is expected, including stakeholder information input for program/project selection, direction and evaluation.
- Each AOE agent member has an opportunity to select a mentor.
- AOE teams are expected to be entrepreneurial and generate resources for enhanced programming.

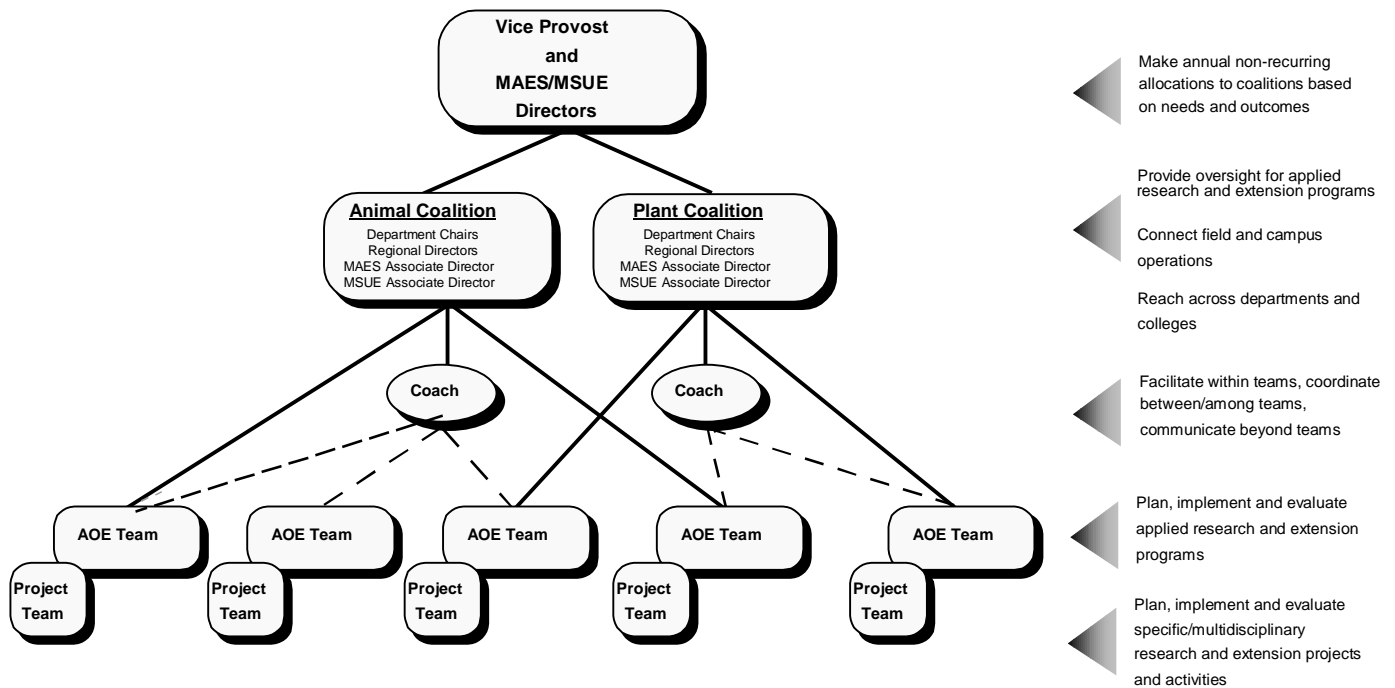
Next, Michigan stakeholders were involved. They were asked to articulate a broad vision for the future in the context of the primary educational role they wanted Extension and the Experiment Station to have for the advancement of their industry or interest group.

Then, the "Developing A Curriculum" (DACUM) process was used as an initial step in creating the general areas of competency—in both technical and process skills—for an agent to be an effective AOE team member (Nelson, 1988). Extension educators and specialists who excel at their jobs were asked to explain in their language what they do and how they do it, and to develop a skill profile of what an Extension worker must be able to do on the job. These DACUM results were used to build curricula for staff development and for developing job descriptions for new AOE team members. Stakeholders were involved in reviewing the DACUM results and provided input on the general areas of competency expected and required for an AOE agent. The DACUM process helped develop internal and external ownership of the AOE teams and their educational functions.

The AOE teams are connected administratively to the broader university through coalitions— some in place and functioning and others in development. Coalitions provide oversight for applied research and Extension and are comprised of department chairs, regional directors and associate directors/directors of Extension and the Experiment Station. The coalitions help connect departments and campus and field personnel and provide a seamless tie between research and Extension. Coalitions are funded by the vice provost and the Extension and Experiment Station directors. Coalition funding of project teams has complemented broader university resources in ways not achieved before.

The dairy and livestock teams are under an Animal Coalition. Similarly, the field crop, fruit, vegetable and landscape/ornamental teams are under a Plant Coalition. Natural resources and children, youth, family and community coalitions are under development. Figure 1 shows the organizational structure of AOE teams.

**Figure 1. MSU Applied Research and Extension Model**



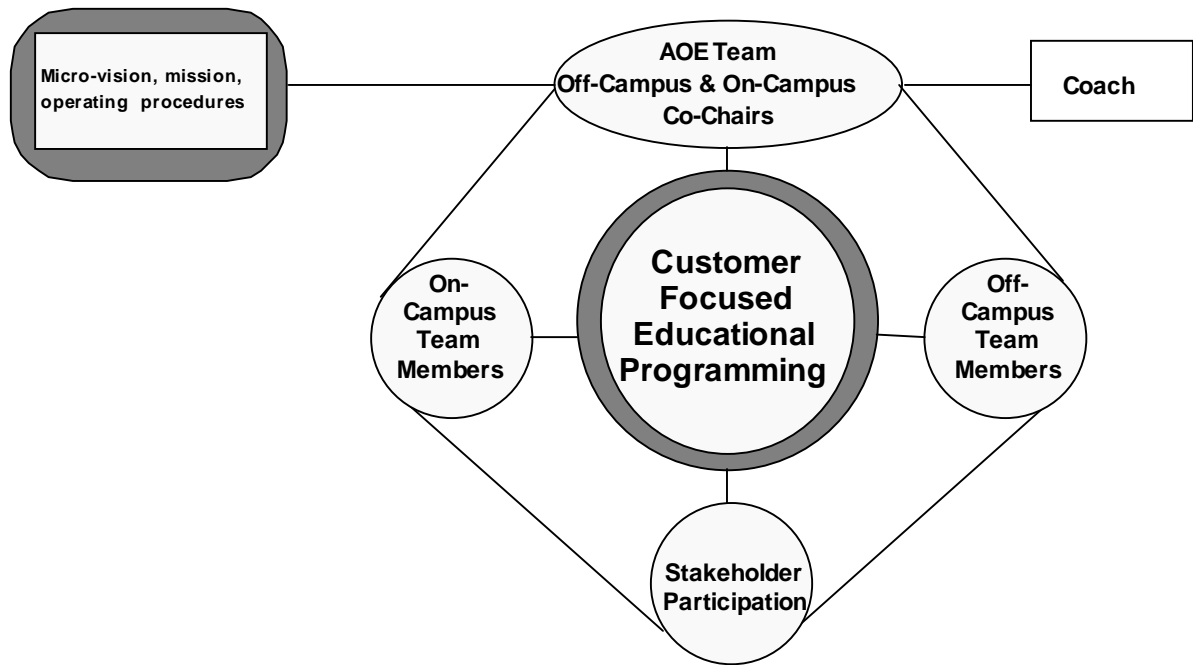
### Organization of AOE Teams

The AOE teams plan, implement and evaluate educational programs to meet the needs of Michigan citizens in some targeted problem or opportunity area (Figure 2). Each team includes agents, specialists (those having both Extension and Experiment Station appointments) and selected others (customers, cooperators, etc.) with interest and expertise in the area of focus—a particular farming system, food industry or educational focus. Within an area of expertise, one or more specializations may be defined by the



team. For example, the livestock team has beef cattle, swine, sheep and equine subgroups.

**Figure 2. Area of Expertise Team Model**



Teams do not have size requirements. Each area of expertise team must include some campus-based members with expertise that links to one or more university academic units as well as agents willing and able to partner with them.

Stakeholder involvement in programming is a key element of the interdisciplinary, problem-solving customer focus of AOE teams. Representatives of stakeholder groups are invited to the AOE meetings to provide feedback on emerging needs and issues facing the industry or interest group. They are also involved in hiring decisions for AOE team members. Stakeholder representatives have participated on a regular basis and contributed to the educational programming of AOE teams.

The teams are expected to be self-directed in all aspects of their educational programming throughout the state. Each team develops plans for program delivery and team capacity enhancement. The teams are involved in assessing and prioritizing customer needs, mentoring new team members and developing team expertise, and planning and implementing an educational response to meet needs. Teams are also expected to evaluate program impacts and document team progress. Technical support is available for program evaluation.

The AOE team co-chairs provide leadership on a rotational basis (terms are one to two years, depending on the team's operating procedures). Co-chairs are selected by the team and serve as facilitators. They are not part of the administrative team (i.e., director, associate directors and regional directors). Performance appraisals are conducted by department chairpersons for specialists and by county Extension directors or regional directors for agents and county Extension directors, respectively. A particular strength is that input from agents about specialists and from specialists about agents can be simultaneously exchanged between department chairs and Extension supervisors during coalition meetings.

A coordinator or coach, who is a member of the administrative team, facilitates the functioning of AOE teams. The coach helps reduce barriers, is the team developer/trainer, and communicates within, among and beyond the teams. Some continuing coach/coordinator role appears necessary, and one coach can serve several teams. The role of the coach tends to be less prominent as the teams evolve and mature- i.e., as they become more self-directed.

The director's office allocated funds for start-up of teams. The funds were used to assess customer needs through focus group interviews, participate in out-of-state training programs, procure reference materials, acquire computer software, etc. Beginning in 1996, teams were provided operating budgets for their priority programming. Teams have been encouraged to look for external funding, and several have sought and received significant outside resources.

Technology that connects team members is crucial to the success of self-directed work teams because geographic dispersion is a key impediment to team development and operation. The AOE team members are connected by e-mail and by two-way interactive television at a number of locations.

The Experiment Station is a key partner with Extension in serving the educational needs of Michigan citizens. Both Experiment Station and Extension directors serve on the coalitions that provide oversight for applied research and Extension programs. To further ensure close working ties, an Extension associate director has a joint appointment with the Experiment Station. Many Experiment Station scientists have joint appointments with Extension and serve on the AOE teams, conduct applied/problem-solving research, and share research-based information through training and publications.

### **Success of AOE Team**

The adoption of AOE teams and related system changes have created the seamless interface between Extension and the Experiment Station, resulting in increased capacity to deliver quality educational programs. A 1996 statewide baseline study of more than 1,600 producers indicated that, within one year of the beginning of AOE team operation,

half of Michigan farmers had heard of the AOE teams and most, irrespective of farm type, education or income level, expressed satisfaction with Extension (Suvedi, 1996).

The Animal Coalition has funded a number of project teams, including livestock and dairy AOE teams that have addressed priority issues identified by stakeholders. Michigan's dairy industry is now proposing a check-off fee for additional funding of research and Extension programs. This is in addition to the industry-sponsored animal initiative that resulted in more than \$4 million in additional annually recurring state funding for the Experiment Station and Extension.

The Plant Coalition AOE teams have been very successful in meeting and surpassing stakeholder expectations. Numerous projects initiated by AOE teams and directly involving industry representatives have been launched during the past three years. Relationships between plant-based agriculture stakeholders and Extension and the Experiment Station have never been better. The industry attributes much of this success to the AOE teams. The plant-based industry is currently proposing a \$6 million annually recurring increase in Extension and Experiment Station state funding to continue the momentum started by the AOE teams and to address additional key issues facing Michigan agriculture.

AOE teams have developed educational programs on topics ranging from entrepreneurial education to tourism and from land use issues and employment in rural areas to economic development in core urban areas. Children, youth and family teams have partnered with Michigan's Family Independence Agency to deliver food and nutrition programs to more than 10,000 families annually. Similarly, the youth development team has partnered with VISTA to deliver youth violence prevention

programs in 13 Michigan counties. Substantial grant funding has resulted from children, youth and family AOE entrepreneurship. The other AOE teams are achieving similar successes.

New local funding partnerships have been developed since regional Extension directors were empowered with staff budgets. These partnerships have offset losses in federal funding sources.

## **Conclusion**

Extension and the Experiment Station have adopted the AOE team approach to develop and deliver quality applied research and Extension programs. The AOE teams have made it possible to eliminate much of Extension's mid-level management and transfer those resources to team support. The AOE team approach, which connects field, campus and stakeholders, and ties research to Extension with an interdisciplinary, problem-solving focus, has produced results that improve peoples' lives.

Preliminary feedback from both campus-based and field staff members has been very positive. A trend of enhanced motivation among field staff members and stronger credibility with agricultural stakeholders has emerged as a result of the AOE approach. Improved credibility has translated into renewed pride among many stakeholders for "their" land-grant university, and this helps assure continued public support into the 21<sup>st</sup> century.

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