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Agricultural Economics Library

UNDERGRADUATE EDUCATIONAL OPPORTUNITIES IN THE
FACE OF DECLINING ENROLLMENTSLester V. Manderscheid

Today's topic is the most important one facing our profession today. Declining enrollments and the prospect of declining budgets have the attention of the deans and other university administrators. Our response to the challenge and the opportunity it presents will determine our survival as a profession and association and, if we survive, the nature of our profession for the next generation.

What is this challenge and opportunity? It is the "crisis" in undergraduate education. We have been inundated with recent studies on what is wrong with undergraduate education (e.g., Boyer, Bloom). Yet many agricultural economists are unaware of the challenge. Enrollments are declining. Deans, Provosts and other administrators are asking why we need undergraduate programs in agriculture. Many agricultural economists, even in the university, spend only a small portion of their time in undergraduate education. Indeed, one of the difficulties is that many teaching faculty think only of "my course" rather than about an undergraduate education. An education is more than a smorgasbord of courses, more than a set of required courses called a curriculum. A curriculum is a set of planned learning experiences for students designed by the faculty to enhance the student's learning processes (Kropp, Manderscheid). An undergraduate education is, of course, even broader because it encompasses advising, counseling, extra curricular experiences, etc.

We all have a stake in the outcome. We are discussing the future extension field staff, the personnel who will play significant roles in agribusiness firms, the future policy analysts and program administrators in government agencies, our future graduate students--the entire future profession of agricultural economists. If we collectively and on our individual campuses develop the best undergraduate education that we can, our future is bright, if not, we are in trouble, big trouble.

Agricultural economists have faced earlier challenges and successfully adapted. Today we have an opportunity to increase our impact on agriculture, the food system and rural America. We can perform a great service to society in the true land-grant tradition. At the same time we can increase the relevance of and the demand for agricultural economists as faculty members as well as in agribusiness firms.

My remarks are organized as follows. Recent enrollment trends will be discussed next. Then we will look at demographic trends and their impacts on the students who will enroll. Job opportunities will be examined. Some trends impacting on undergraduate program design will be considered. Then we will examine some principles important in redesigning programs. The final section will summarize some of the major ideas.

Enrollment Trends

During the past 10 years agricultural enrollments in land-grant universities have fallen by 35 percent, from approximately 100,000 to approximately 65,000 baccalaureate students (NASULGC). Similarly, but to a lesser degree, baccalaureate enrollments in agricultural programs in Canada fell by 17 percent over the same period (Jenkinson). Meanwhile, over this period members of the (non land-grant) American Association of State Colleges of Agriculture and Renewable Resources (AASCARR) reported a drop of 13 percent in baccalaureate enrollments for the 59-member institutions. Is it any wonder that administrators in the colleges of agriculture and elsewhere in the university are asking the question, do we need an undergraduate program in agriculture? One suspects that some authors of the Morrill Act may be turning in their graves. They wrote that each State that accepted the Land Grant was to provide "... at least one college where the leading objective shall be, without excluding other scientific and classical studies including military tactics, to teach such branches of learning as are related to agriculture and the mechanical arts -- in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life" (Aldrich, p 7).

Let us briefly examine what has happened to enrollments within the colleges of agriculture in the land grant system. Comparable data series on agricultural majors begin with the fall of 1982. From 1982 through 1987 baccalaureate enrollments in all fields dropped 25 percent. In the area of agricultural business and management enrollments dropped 15 percent. In the field of agricultural education, communication and social sciences enrollments also dropped 15 percent. Those suffering the largest declines in enrollments were (ordered from largest to smallest percentage decline): general agriculture, agricultural engineering and mechanization, natural resources, plant sciences and animal sciences. All those areas had enrollment declines greater than those in the social sciences. Thus, the social sciences fared relatively better, suffering a decline but by less than most agricultural majors. Food science and nutrition showed an increase in enrollment of 13 percent, while the number of majors in basic agriculturally related biological and physical sciences offered through the colleges of agriculture increased 158 percent, from about 2500 to 6500. AASCARR data indicate similar enrollment patterns.

My purpose in reviewing these numbers is to set the stage for discussing the role of agricultural economists in addressing undergraduate education. During the current "crisis", college and university administrators are more receptive than usual to ideas for program modifications and enhancements. Deans are concerned that declining enrollments will mean declining teaching budgets. Some are advocating a quick fix, such as increased recruiting efforts. Others, myself included, view this as an opportunity to rethink and reshape our undergraduate programs to better prepare our graduates for productive and rewarding lives well into the next century and thus attract increased enrollments.

Demographic Trends

We have all heard of the decline in birth rates that occurred in the 1960's and 1970's with a consequent impact on school enrollments. It is not necessary to repeat those statistics here. Suffice it to note that at the national level the number of high school graduates will reach its low in 1998 and an extremely small, declining percentage will have farm experience.

There are several additional demographic factors that need to be considered as we plan future undergraduate educational programs. These include the changing age mix of students, the changing family status and the evolving ethnic diversity.

Mid-career changes have led to an increased number of older students. This past year eleven percent of the student body at Michigan State University was age 31 or greater. Hodgkinson (1985) projects that by 1992 half of all college students will be over 25 and 20% will be over 35 years of age. It is likely that a number of these students will be working on second bachelor's degrees in order to change career direction while others will be working on a master's degree either to change career direction or advance their careers.

Census projections show that 59% of the children born in 1983 will live with only one parent before reaching age 18. Thus a majority of our college entrant pool in the year 2000 will have had the experience of living in a single parent household. Out of every 100 children born in the mid-1980's: 12 will be born out of wedlock, 40 will be born to parents who divorce before the child is 18, five will be born to parents who separate, two will be born to parents of whom one will die before the child reaches 18 and only 41 will reach age 18 in a "normal" two-parent family. A corollary of the single parent household is a likely increase in the number of students who will need financial aid and/or part-time employment to finance their education (Hodgkinson, 1986).

Huffman and Johnson have noted a reduction in family-specific capital investment as women have increased their participation in the labor force and as urbanization continues. Colleges and universities may also be required to work more closely with secondary schools to increase the retention rate among able students from low income households and to encourage more of the able students to enroll in college. States with a poor retention rate will have a weaker base for state economic development with a consequent lower tax base to support higher education. Anyone concerned with the future of agriculture has a particular interest in efforts to improve pre-collegiate education because the national average SAT scores of undergraduate students entering agriculture are low--exceeding only home economics. The GRE scores for entering graduate students are also low. Thus, quality of students as well as the number of students is an issue (National Research Council).

The United States has long been considered a melting pot where persons of diverse backgrounds share their diverse abilities to yield a strong citizenry. California already has a predominance of minorities in its elementary schools and half of the states already have public school populations that are more than 25% non white. Given present trends hispanics will outnumber blacks by the year 2020. Indeed by the year 2000 minorities will comprise one third of the U.S. population. The recent influx of Asian Americans has added another dimension of language difficulty that taxes our educational system. This impact has been felt at the collegiate level because many of the immigrants already had a college degree or were ready for college education (Hodgkinson, 1985).

Demand for Educated Personnel

The Bureau of Labor Statistics (BLS) has updated its labor force projections to the year 2000. Only two groups, "farming, forestry and fishing workers" and "private

household workers" are expected to have absolute declines in employment over the period 1986-2000. Note that "farming, forestry and fishing workers" are only a small part of total food system employment. The five occupational groups projected to experience faster than average employment growth over that period are technicians, service workers, professional workers, sales workers and executive and managerial employees (Kutscher).

Table 1 contains some interesting information on employment by selected industry with projections to the year 2000. Both agriculture as an industry and food and kindred products manufacturing as a subindustry are projected to lose employment between 1986 and 2000. On the other hand there is a significant increase projected for employment in the retail trade associated with food marketing. In fact in the year 1986 employment in eating and drinking places already exceeded that in agriculture! By the year 2000 it is projected that grocery store employment will exceed that in agriculture and the combined employment in grocery stores and eating and drinking places will be nearly four times as large as the employment in agriculture, which is narrowly defined by BLS as on-farm activities. Only a portion of the total employment in the food system is included in Table 1; the selected data highlight some major employment changes within agriculture and the food system.

TABLE 1
Employment by Selected Industry

Industry	Employment (Thousands)		Annual Rate of Change (Percent)	
	1986	Projected 2000	Employment	Output
Agriculture	3252	2917	-0.8	2.4
Non-durable Manufacturing Food and kindred products	1617	1456	-0.7	1.5
Retail Trade				
Grocery Stores	2523	3121	1.5	N.A.
Eating and drinking places	5879	8365	2.6	1.9

N.A. Not calculated

(Personick, pp. 41, 42, 43)

A USDA study projects the supply and demand for agricultural graduates through 1990. Agribusiness management and marketing will provide significant employment opportunities for college graduates with expertise in agriculture. On the other hand, graduates seeking positions in education, production agriculture and communication will encounter strong competition for the limited employment

opportunities expected to be available (Coulter). These projections are consistent with enrollment shifts already noted within colleges of agriculture.

Another aspect of the job market that must be considered in examining undergraduate programs is the mobility factor. Current labor statistics indicate students now graduating from college at age 22 can expect to change jobs seven times and careers three times over their lives (Chickering). If these statistics are even remotely valid, they have clear implications for the design of undergraduate programs. Are we designing these programs for the first job or the second job or the seventh job? Are we developing programs that will permit or facilitate changes in career paths? The increasing number of older students is related to this changing of career paths and jobs. Not only must we be concerned about curricula design that recognizes future mobility as an objective but we also need to be concerned about the adequacy of our academic advising and counseling services. Such services need to recognize the changing nature of future jobs both in terms of the number available and the requirements for the positions. It will cause us to reexamine our roles as educators and to integrate the planning of lifelong education programs and the Cooperative Extension Service programs.

Some Additional Factors to Consider in Curriculum Design

Several studies have raised interesting questions about the design of undergraduate programs. While the coverage is not complete, the ideas included provoke a number of thoughts.

Since a primary purpose of higher education is to prepare people for the longer run, we need to think of the kind of future world that they will occupy. In a recent address by John Naisbitt, he updated his 10 key points or concepts in planning for the next millennium. They are:

1. An information based economy is a high wage economy.
2. The big story of the 1990's is a renewing of the arts, letters and spirituality and not the growth of high technology.
3. The decline of cities as a result of electronic linkages that permit more people to work at home or in rural settings.
4. The end of the welfare state and death of socialism as a result of the globalization of self help and privatization.
5. English is the first truly universal language with at least one billion people having a usable comprehension of English in one way or another.
6. There is a growing individualization of our global economy through personal computer linkage, video cassettes and other communication technologies.
7. This is an economic and cultural shift from the Atlantic toward the Pacific basin.
8. In the United States there will be a continued shift to entrepreneurial politics from political parties, e.g. 1984 two thirds of the local and state candidates were elected as democrats even though Reagan carried the national majority.
9. There are few limits to growth in an information based society.
10. We are moving slowly to world-wide free trade where eventually there will be one market, one economy, not 80 or 90 individual nations exchanging goods in international trade.

While one may disagree with Naisbitt's projections, they do stimulate us to think about the changes that have occurred in our lifetime and the likely continued change over the lives of the students who enter our classrooms in the 1990s. These students will be in their most productive years in the 2020s and 2030s. We need to ask ourselves what kind of a world are we preparing our students to live and work in over their lifetime.

A recent staff paper prepared for the New England Board of Higher Education argues that there is an important linkage between international knowledge and economic competitiveness for the United States or regions within the United States (Groennings). The paper contrasts the U.S. with Japan. Particular attention to international knowledge is a strategic factor in Japan's economic success. The paper recognizes that international knowledge by itself is not sufficient because business, technical, functional and organizational skills are also necessary for a firm to be economically competitive in global economy.

In a similar vein Schuh has argued that we are not preparing either our adult constituency or classroom audiences for the kind of world in which they must work and compete. In my judgment he correctly argues that we are not teaching students what they need to know about the global economy, society in general and our political system.

Now let us turn to the nature of agricultural economics and what our contributions might be. In this context I find the distinction between the production sciences and the impact sciences in agriculture quite helpful. Production scientists orient their work primarily toward increased productivity or profitability. On the other hand, impact assessment scientists are primarily oriented toward understanding the impacts of changes in agriculture on human or ecological/biological systems (Buttel). In the United States most agricultural economists are production scientists in orientation, while rural sociologists are primarily impact scientists in orientation. However, agricultural economics is not necessarily a production science. Some western European agricultural economists are clearly impact science oriented as are many institutionally-oriented agricultural economists in the United States (Bromley). Agricultural economists need to place greater emphasis on the impact science orientation if we wish to make the contributions to agriculture and society that we should, particularly in an era of increased concern about agricultural sustainability, food safety, quality of rural life, environmental safety and quality, and so on.

Another recent development is the increased interest in cooperation among the social scientists, especially with respect to obtaining research funding. Several efforts deserve mention. First, is the NCT-146 Committee activity. This committee includes agricultural economists, rural sociologists, and home economists from the North Central Region. They have been developing a strategy to increase funding for social science oriented research. As I read their output there is an agreement on the need for more impact oriented research both among the social scientists and in cooperation with biological and physical scientists concerned with agriculture. In my opinion this is a belated recognition that social scientists need to work together, if the funding for total social science research is to increase. We spend far too much time now quibbling over how to divide a very small amount of research money.

A closely related development is the ESCOP ad hoc subcommittee for social science funding initiatives. This subcommittee has been developing the case for a major research thrust in the area of agriculture and rural viability. Here too, the orientation is across the rural social sciences rather than separate agricultural economics, rural sociology, home economics and other rural social science orientations.

Another aspect of this significant shift toward considering the social sciences as a group is the Social Science Agricultural Agenda Project (SSAAP) under the leadership of Ed Rossmiller, John Lee and Glenn Johnson. This project has wide sponsorship and has held two national conferences focused on developing the social science agenda in agriculture and rural affairs. Every attempt has been made to be inclusive in participation with the hope that the resulting priorities have the greatest relevance and will be supported by a broad constituency of social scientists concerned with agriculture and rural life. The SSAAP project is concerned with instructional activities as well as research and extension. It has resulted in conference conversations among anthropologists, historians, geographers, political scientists, philosophers, economists and others that went beyond what normally happens on our home campuses. Conference participants returned home recognizing the need to improve their linkages with social science colleagues, many of whom are outside of the college of agriculture.

Finally, there is the agribusiness education project that held a White House conference in 1987. The conference focused attention on education for agribusiness management both at the baccalaureate level and beyond. Faculty and administrators in both colleges of agriculture and colleges of business participated along with a number of agribusiness firm personnel. Some of the results of that activity are highlighted by the survey reported by Litzenberg and Schneider at last year's AAEA meetings. In their survey of agribusiness firms designed to elicit needed competencies, they grouped the competencies into six general categories. On a scale of one to ten interpersonal characteristics rated 8.7; communication skills, 8.1; business and economic skills, 6.5; technical skills, 4.7; computer, quantitative and management information skills, 4.7; and previous work experience, 4.6. Note the overwhelming weight given to interpersonal characteristics and communication skills.

Further Implications for Designing Undergraduate Programs

Declining enrollments affect both the Colleges of Agriculture and Departments of Agricultural Economics. The discussion of demographic nature of future enrollments, future employment prospects and trends impinging on the future of our society set the stage for a discussion of the kind of educational opportunities that we should provide. Any attempt to increase enrollment that is motivated only by protection of our jobs, or maintaining the size of our department, raises serious ethical issues--and will soon be seen by students for what it is. The lives and futures of young people are at stake. For us to do less than provide them the best education we can is to do them and the future of our society a grave disservice.

In thinking about curriculum design I find Connor's distinction between discipline-based majors and professional majors particularly helpful. He suggested disciplinary majors exist only where there are a significant number of national departments offering baccalaureate and doctoral degrees with one or more

established national journals and a professional society. Thus, agricultural economics, agricultural engineering and agronomy can be considered discipline-based majors.

Professional majors are more vocationally oriented with the bulk of the graduates entering the world of work following the baccalaureate degree. Examples of professional majors would include agribusiness, agricultural communications, food marketing, farm and ranch management, etc. (Hite).

This distinction is important in helping us to think about curricula design because it helps us distinguish between preparing students for top flight graduate schools and preparing students for the world of work. For example, mathematics through a full year of calculus, matrix algebra and differential equations is quite appropriate for the aspiring Ph.D candidate. On the other hand, accounting, retail management, and post harvest physiology may be much more relevant to the person aspiring to a career in food marketing. The distinction reminds us that a curriculum designed to replicate the faculty may serve one group of students well but will fail to serve a broader audience.

Some land grant colleges of agriculture have become so national and disciplinary in their faculty orientation that the colleges lack problem solving capability, cannot support extension programs and are losing clientele and legislative support. Disciplinary curricula can thrive but professional education flounders. National reputations do not do you much good, if the state legislature and the public do not believe the college is committed to the state, the welfare of its citizens and the education of their youth (Bonnen). To change this requires that we insist our faculty reward system give full credit for excellence in undergraduate education. Rewarding only disciplinary research excellence will lead to the demise of agricultural economics.

Our attitude toward teaching is revealed by our terminology. When hiring new faculty we talk about teaching load and research opportunity. What would we signal if we talked about a research load of three peer-reviewed publications and two legislative briefings with the opportunity to teach some courses. Faculty must be prepared for excellence in undergraduate education. A shift toward professionally oriented undergraduate education portends a shift in graduate education. More Ph.D. candidates may need to consider a field or cognate in business, sociology or agricultural science. More faculty may take a sabbatic to develop expertise in a related field. All faculty will need an understanding of the operating food system and should be required to achieve a minimal level before obtaining the Ph.D. degree.

Another principle is holism. An education is more than a set of courses, required and elective. An education is ideally an integrated set of learning experiences both curricular and non-curricular. Some learning experiences are best left for the first job, others for internships, still others for extracurricular activities. On any campus the faculty are responsible for making the determination of what can best be done formally in the four-year curriculum. We must avoid the trap of focusing only on the part, only on "my course" and be concerned for the whole--an excellent steering wheel is necessary but not sufficient for an excellent automobile (Berry).

Strategies for excellence will vary from campus to campus and be shaped by the unique mission and traditions of the institution. We must make use of the strengths of each of our campuses and not try to impose uniformity across the great diversity that exists. Scientific methods and approaches can be learned in many different departments. We must choose the particular courses and learning experiences available on our campus best suited to the students' total education. Furthermore, we need to build a holistic program concerned with the total individual and not merely the credits and courses to be offered in agricultural economics (Manderscheid).

Another principle concerns the shifting balance of agricultural economics as both an impact science and a production science. It is increasingly clear that society is concerned about issues such as agricultural sustainability, food safety and environmental quality. Our students need to recognize not only the profit potential of new technologies, but also their likely impact on society and society's willingness to allow adoption of the technology. This principle will affect undergraduate education in two ways. We will take a deeper look at the effect of new technologies within agricultural economics courses and we will pay more attention to the other social sciences in designing undergraduate educational programs. These changes will be particularly important for professionally oriented programs.

The discussion of trends clearly indicated the need for a greater understanding of the global society in which we live. Unfortunately, some equate international understanding with no more than a foreign language requirement. While a foreign language may contribute to understanding another culture, it is also true that language can be taught as a sterile exercise in memorization and understanding of rules much like mathematics or a computer language. My own perspective is that we should shift toward some knowledge of foreign language as an entrance requirement for the baccalaureate degree. Agricultural economists have a special obligation to insure an undergraduate education with an international dimension that sensitizes students to the cultural diversity in the world. We have a special obligation because of the significant professional role of agricultural economists assisting in export marketing and in the development efforts around the world. We need to bring those experiences back to the campus and integrate them into the whole of the undergraduate education rather than treat international diversity separate from the core program.

Another principle is avoiding overspecialization. This is especially true of professional undergraduate education. Today's graduates will probably change careers three times and jobs seven times during their working lifetime. Therefore, we need to recognize that we are building a base for future learning. This base needs to focus on learning principles and ways of thinking rather than detailed subject matter that might be learned more quickly on the job. There has already been a significant increase in specialized on-the-job training programs in business and industry (Hodgkinson, 1986).

In addition to avoiding overspecialization we need to move away from the pure lecture or lecture/lab mode of teaching. In addition, new technologies such as video tapes and inexpensive computers allow us to alter classroom procedures. Computers allow us to design more realistic exercises because the student can process large quantities of data in a short period of time. Designing these exercises forces us to think about what the students need to learn (King). Involvement makes the student

an active learner rather than a passive listener. Similarly, there may be a role for televised segments of classes to illuminate concepts and ideas.

Attention to a total undergraduate program recognizes the need for advising and counseling services that assist students, whether 18 or 58, identify further opportunities and the educational path to achieve their new goal. Some of these services will be provided centrally. But agricultural economists must provide guidance because we know agriculture and the food system better than any generalist (Padberg).

Another challenge to our profession is to offer an understanding of agriculture and the food system for students throughout the university. The Kellogg Foundation funded a series of activities to cultivate agricultural literacy, particularly in the liberal arts colleges (Douglas). I suggest that we experiment in providing agricultural literacy to the vast majority of undergraduate students who no longer have a farm or even a rural background. Most of these students are outside of the colleges of agriculture, but a fair number of them are within. Courses that might be offered include: (1) the food system in the economy, a systems approach, (2) food safety, (3) evolution of rural institutions including the land-grant system, (4) ethical issues in the food system, (5) world population, food supply and development. We need to attract large groups of undergraduates to courses that expose them to the food system and the problems of rural America. This is a growth opportunity for our departments and our profession. It will require collaboration with faculty in other areas to assure that the multidisciplinary emphasis in these courses is up to date. We should learn from the experience of the University of Florida where students found the subject matter of agriculture very interesting once they got past their widespread bias against it (Haynes). This suggests that "agriculture" in the title or description of a course may detract from its enrollment appeal. However, once the student discovers modern agriculture they may develop sufficient interest to major in it.

Summary and Conclusions

We live in a dynamic society where many take agriculture and the food supply for granted. As a profession we have an obligation to educate the public and prospective undergraduates on the importance of qualified personnel to staff our food system. Such an effort will help attract able students to our program.

Our future pool of students will be more diverse ethnically than our current pool. More will have experienced life in a single parent household. Fewer students will be the traditional 18 to 21 years of age. The number with a farm background will shrink. The values and outlook of many students are likely to do very different from our own.

Labor force projections indicate that the total food system will demand an increased number of managers and other college-educated personnel whether educated in agriculture or elsewhere. Mobility will continue to be a major consideration with the average person changing careers three times and jobs seven times during a working life.

Change continues in the global society in which our graduates will live and work. Educating for change is a necessity.

In planning undergraduate experiences it is useful to distinguish the professional from the disciplinary emphasis. The disciplinary orientation emphasizes preparation for graduate school, while the professional is more vocational. We must beware of training solely for the first job. We must broaden the students' abilities to facilitate future learning and career or job changes. We need to rebalance the profession to increase our impact science orientation. Agricultural economists have a special obligation to internationalize undergraduate education. We also need to offer students throughout the university an opportunity to learn about issues in agriculture and the food system. If we do not, society will make even more major future mistakes in policies affecting on agriculture, the food system and rural America.

This time of declining enrollments has led administrators to seek new ideas for undergraduate education in agriculture. The demand for professional oriented agricultural economists exists. We need to create the undergraduate education programs to prepare students for those opportunities. In the process we can also increase the demand for faculty to implement these programs.

In an attempt to make this more concrete, let me suggest what may happen as we reorganize undergraduate education at Michigan State. Our department may well participate in four programs. One will be the disciplinary program in agricultural economics. Three will be professional programs administered only in part within the department. One will focus on agribusiness including input supply, farming and the marketing and processing of commodities. A second professional major will emphasize food marketing at the wholesale, retail and institutional levels. These two majors will share many components but will differ some in content and significantly in the market appeal for graduates--most food merchandisers do not identify with agribusiness. The third professional major will focus on community development and management and will involve cooperation with sociologists.

What may happen at Michigan State is not the main message that I want to leave with you. My message is that we need individually and collectively to address the critical need to modernize undergraduate education. Failure to do so will result in society creating new institutions to fill the void -- just as the Land Grant Universities were created as a challenge to traditional or classical education. We have a unique opportunity because of our tradition of combining economics and agricultural sciences to work on practical problems (Williams). Our challenge is to adapt our programs within the autonomy of each college and university, to become more professionally relevant to the changing, dynamic society in which we live. At the same time we must educate each individual for a lifetime of learning, a series of career and job changes, a rewarding and fulfilling life, and a contributing role as a citizen. That is a major challenge and opportunity. Let's seize this opportunity. Let's take the leadership role. Let's start now!

Presidential Address

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Artabasy, James T.	Manager, ANR Personnel Services	113 Agriculture Hall	517-353-9108
Glazier, Gary M.	Associate Manager, ANR Personnel Services	113 Agriculture Hall	517-353-6649
	Extension Program Leader, Evaluation and Reporting; Coordinator, International Training Program	48 Agriculture Hall	517-353-9158
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REGIONAL EXTENSION SUPERVISORS

East Central

Marinez, Juan	Regional Extension Supervisor and Program Leader, Special Programs	48 Agriculture Hall	517-353-9772
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Southeast

Thompson, Paul W.	Regional Extension Supervisor	48 Agriculture Hall	517-355-2313
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North

Matchett, Melvin R.	Regional Extension Supervisor	720 Chisholm Street Alpena, Michigan 49707	517-354-4411
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Upper Peninsula

Clark, Raymond J.	Acting Regional Extension Supervisor	U.P. Extension Center 1030 Wright Street Marquette, Michigan 49855	906-228-4830
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Southwest

Lessard, Joseph A.	Regional Extension Supervisor	48 Agriculture Hall	517-355-0287
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West Central

Clarkson, Sandra S.	Regional Extension Supervisor	48 Agriculture Hall	517-355-2317
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