

Plan of Work

FY 2000 - FY 2004

Agricultural Research, Extension, and Education Act of 1998

United States Department of Agriculture

Cooperative State Research, Education, and Extension Service (CREES)

Formula Programs

University of Illinois Extension – Office of Extension and Outreach

- and -

Illinois Agricultural Experiment Station - Office of Research

University of Illinois

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Overview

The guidelines of the Agricultural Research, Extension, and Education Act of 1998 allow for considerable latitude in how participating institutions develop and report plans of work for the next five years. Although the research and extension facets of the Illinois plan are reported as one, we also highlight some of the background unique to each of these activities.

At the University of Illinois, research and outreach have been partners for a long time. However, in the last four years it has been a high priority policy issue on the part of the College of Agricultural, Consumer and Environmental Sciences (ACES) to closely integrate the two activities. Steps have been taken to reflect this high emphasis: administrative appointments range over the function areas within the College and an administrators' retreat has been devoted to enhancing the integration of research and outreach. One of the outcomes of the retreat activity has been that all extension educators are in the process of being provided with appointments in the appropriate academic departments on campus. In the College, among campus-based faculty and academic professionals who have at least a partial appointment in Extension, nearly 75% have an appointment that includes a research and/or teaching component as well. Given the strong commitment to integrated research and outreach activities, and the advanced level of implementation of the philosophy of integrated research and outreach, the present document is a combined plan of work that represents the research and outreach components of the College mission.

University of Illinois Extension and the Illinois Agricultural Experiment Station are located in the College of Agricultural, Consumer and Environmental Sciences at the University of Illinois. In its research and outreach, ACES serves a large and complex state. Of the 12,045,326 (1998 est.) inhabitants of the state, about 85 percent are classified as metropolitan. At the same time Illinois still is a major agricultural state: 77.5 percent of the land cover in Illinois is agricultural, 11.3 percent is woodland, wetlands make up 3.12 percent, and 5.8 percent would be defined as urban and built-up land. The remainder of the land is open water and land used for quarries, strip mines, etc. At the state level, agriculture is a major component of the Illinois economy. It generates over \$9 billion annually in cash receipts. Illinois ranks third nationally in the export of agricultural commodities, with more than \$3 billion annually. Agriculture-related industries such as farm machinery manufacturing and food processing further contribute to the state's economy.

While the economy in Illinois is strong and state unemployment figures are below 4 percent, there are many pockets of unemployment and poverty. For example, according to the 1996 census the poverty rate for the state was 11.3 percent; 18.5 percent of persons under the age of 18 years were below the poverty level.

The complexity of the state is reflected in the research and outreach programs of the College of ACES. Many programs are focused on agricultural producers and the supporting economic activities that help the producers to be more efficient. In terms of the delivery of educational programs and information to producers, in many instances the information is brought to the producer through intermediaries in the governmental and commercial sectors. For example, consultants in the private sector as well as suppliers of inputs are an important channel for providing information to individual producers. At the same time, there are research and

extension efforts in nutrition that focus on low-resource audiences, many of them in urban areas. Of the nearly 230,000 participants in our 4-H program, 61 percent are located in mid-sized towns, suburbs or cities. The diversity of the population has given rise to several programming initiatives to specifically address the needs of non-English speaking audiences. *Nuevos Horizontes* is a radio program that brings nutrition and other family-related information to Spanish speaking audiences. Finally, research results are communicated to policymakers at the state and local level to enable them to more successfully address policy issues.

College of Agricultural, Consumer and Environmental Sciences

When ACES (or its predecessors) was established, farmers were, for the most part, the producer, processor, distributor, retailer, and consumer of agricultural products and services and provided almost all of the inputs and support services. Now, in large measure because of research, extension, and teaching in land-grant universities, the food and agriculture sector is characterized by a high degree of specialization. Its functions are carried out by an enormous number of geographically dispersed, diverse institutions, agencies, organizations, firms, and individuals. Collectively, these people constitute some 20 percent of the population. Each performs a unique and specialized role. Even farmers are specialists and rely heavily on other specialists to produce crops and livestock.

The primary farmer/producer/manager is still very important, because wealth and value-added opportunities are created on the farms and in the forests and fisheries of the nation. These primary producers, however, now make up only a small proportion of people managing and working in the food and agriculture sector. Land-grant Colleges of Agriculture now embrace many more specialties than in the past. Scientists conduct research in virtually all of the basic scientific disciplines. Through outreach, the research is expected to support not only producers but also processors, distributors, retailers, and consumers, as well as financial institutions, suppliers, transporters, equippers, builders, agricultural organizations, consultants, branches of government, government agencies, other colleges of agriculture, other institutions, and the media. ACES programs thus deal with a number of issues that cut broadly across the food and agriculture sector, including extremely important natural resource, environmental, food safety, human resource, and social impact issues that are major concerns of the general public.

When IAES and Extension were founded, family life, family economics, child development, and rural development were seen as integral to agriculture, since almost all families were farm families, almost all children grew up on farms and participated in farming, and rural areas were made up of farms. At its origin, the 4-H organization, which has direct ties to universities, was an enormously successful and useful program for rural youth and was strongly identified with farming and home making. Because of their identification with farming and homemaking, human (family, child) and community development fell within the subject matter scope of agriculture colleges, including ACES. Of course, these subjects are as important to non-farm rural dwellers and urban residents which constitute the vast majority of citizens, as they are to farmers.

The College of ACES has gone through major organizational reform. The reform reduced the number of departments to seven, and many administrative roles were redefined. Associate deans

in the College, as well as department heads, were explicitly assigned responsibility in all three functional areas of the college: teaching, research, and outreach. Department heads' roles in coordinating and supporting these various functional activities also are now explicitly recognized in the organizational chart of the College.

The reorganization was instituted to strengthen the individual units within the College and make them more robust in dealing with a rapidly changing environment. Part of the changing environment is the reduction of resources. For example, the College of ACES has changed from 319 faculty positions a decade ago to 245 faculty positions as of FY 1999. This is an overall reduction of faculty positions of 23 percent. During the same time period, the number of extension faculty appointments, measured in FTEs, has declined by 56 percent. Off-campus extension positions have declined by approximately 30 percent since 1986.

Given the importance of academic departments in terms of guiding the research agenda, as well as maintaining quality standards, a brief overview of the ACES departments and two associated units is provided.

q Agricultural and consumer economics

The focus of the Department of Agricultural and Consumer Economics is to strengthen the sustainable competitive advantages of Illinois food and agricultural industries. Research and outreach has focused on finance and credit issues related to firm-level decisions as well as issues at the industry level. At the firm level, methods have been developed for evaluating farmers' credit worthiness that result in more equitable and cost-effective interest rates and other credit terms on farm loans. Improved risk assessment methods have been used to enhance the availability and quality of information about lender/borrower relationships, reducing interest and non-interest costs of using debt capital to finance agricultural production. The unit also considers the economics of environmentally responsible food production systems, including environmental law issues. Family and consumer economics are also topics of research and outreach programs.

q Agricultural engineering

Research and outreach in the Department of Agricultural Engineering addresses the opportunities and problems of agricultural production, processing, and utilization. Major areas are food and bioprocess engineering, off-road power and machinery design, soil and water resource engineering, and structural and bioenvironmental engineering. An example of food and bioprocess engineering is magnetic resonance imaging (MRI), which is used to detect the structure, physical composition, and heat and mass transfer in foods and grains. Off-road power and machinery design focuses on crop production systems, automation of agricultural production, and farm safety. Soil and water resource engineering focuses on environmental protection and water management. Structural and bio-environmental engineering works with agricultural industries to develop higher quality products.

q Animal sciences

The objectives of research and outreach in the Department of Animal Sciences include the development and dissemination of a very broad spectrum of knowledge on the care and welfare of animals that coexist in symbiosis with humans. This encompasses many overlapping aspects of research and education. Several disciplines are emphasized, including genetics, environment,

immunology, meat science, nutrition, and microbiology. Animal sciences research involves an extensive infrastructure of on- and off-campus research facilities and numerous flocks and herds.

q Crop sciences

The Department of Crop Sciences is positioning itself to provide the research information necessary to meet the challenges of improving environmental quality while providing the increased crop productivity needed to feed an increasing world population. The unifying theme of the research and outreach activities is the sustainability, profitability, and environmental soundness of Illinois agriculture. Some areas of emphasis include crop breeding, genetics and molecular genetics, plant pathology, crop physiology, crop biochemistry, and weed science.

q Food science and human nutrition

Research and outreach areas in the Department of Food Science and Human Nutrition include food process engineering, chemical and physical properties of foods and chemicals, microbiology, microbial aspects of food preservation, bioconversions, bioprocess engineering, applied biotechnology, the nutritional role of dietary constituents, fundamental properties of foods and food systems, food safety, growth and development, nutrition in all stages of human life, and prevention of diseases. Disciplines and topics that are emphasized include food processing and engineering, food chemistry, foods and nutrition, and food microbiology.

q Human and community development

The Department of Human and Community Development focuses on the interaction among human activity systems forming the fundamental building blocks of rural and urban societies worldwide. Members of the department apply multiple strategies to analyze problems, develop solutions, and deliver information across a variety of channels, to improve the lives of children, youth, and adults in the context of families, communities, and societies. Research and outreach in the department encompasses content on human development, family studies, community development, agricultural and environmental communications, and education.

q Natural resources and environmental sciences

The Department of Natural Resources and Environmental Sciences (NRES) endeavors to establish and implement research and educational programs that enhance environmental stewardship in the management and use of natural, agricultural, and urban systems in a socially responsible manner. NRES merges traditional forestry, horticulture, soils, entomology, and fiber science strengths, focusing on systems approaches to natural resource management and crop production. NRES serves as a catalyst in the environmental science arena. It encompasses studies of scientifically important and socially relevant issues relating to forest and agricultural crop production and use, sustainable agriculture, pest and disease management, resource management, and the human dimensions of these issues. At the heart of the NRES mission are stewardship of our resources and fostering economically and socially viable, sustainable production systems.

q Nutritional sciences

The Division of Nutritional Sciences is a cross-college interdisciplinary graduate research and education program headquartered in ACES. Nutrition is a science that examines the sum total of processes involved in taking in and utilizing food substances by which growth, repair, and maintenance of health are accomplished. These processes include ingestion, digestion, absorption, and metabolism of food and nutrients. Research strengths can be classified into five

broad theme areas in which our faculty and students are most active: 1) nutritional requirements for optimal growth and well-being of man and animals; 2) impact of nutrition on health and risk of chronic non-infectious disease; 3) relation of nutrients to gene expression; 4) nutrient composition of foods and feeds and the impact of agricultural practices, handling, and processing on food safety and quality; and 5) factors determining food preferences, habits and techniques for guiding consumers in selection of nutritionally-adequate diets.

q Veterinary research

The College of Veterinary Medicine has an active research and outreach program emphasizing livestock species. Faculty from all three of the College of Veterinary Medicine 's departments—Veterinary Biosciences, Veterinary Clinical Medicine, and Veterinary Pathobiology—discover, apply, and disseminate comparative biomedical knowledge and technology. Their projects range from in-depth looks at specific biological functions to evaluations of overall animal health and disease prevention. Areas of research emphasis include infectious disease, epidemiology, microbiology, parasitology, animal nutrition, toxicology, and reproductive physiology and function.

Future Staffing and Planning

Within a planning horizon of five years, it is expected that ACES and its departments, through retirements and resignations, will recruit 35 FTE of "replacement" faculty. This estimate is predicated on an assumption of no significant, unexpected base budget reductions. Thirteen replacement faculty have been recruited in FY99 as ACES attempts to restore some institutional capacity lost in recent years.

Within five years, there may be C-FAR funds available that could be used to hire new core (long-term) research personnel. Any available research funds can be blended with extension and university base funds to support appointments that are joint among at least two functions. We anticipate a one-time cost of up to \$200,000, on average, for a recruitment package for each new professorial hire.

A process is being developed to determine the subject matter to be addressed by each of the new positions. Some indications are evident in the expressions of stakeholders. For example, C-FAR member organizations have expressed concerns about dwindling or inadequate capacity in corn breeding and genetics, forage crops, social sciences, farm management, and agricultural systems science.

The College of ACES is strongly committed to coordinated education, research and outreach programs. The College has undertaken many steps to finalize this goal through reorganization and restructuring.

In 1999, a College Planning office was established in ACES that has responsibility to lead the strategic planning processes for the College and to coordinate other planning, evaluation, and reporting functions of the College. A Director of College Planning was hired and a strategic planning process, intended to integrate strategic processes with other planning functions for all

College units and departments, has commenced. This process will yield more definitive strategies and outcomes in the future to supplement and refine the Plan of Work.

Several complementary components of the College Planning initiative are or will be underway in 1999/2000:

q Integration of Planning Processes

An important objective of the College planning process is to address the diverse goals and planning needs for our various partners with a common planning approach, including federal partners, the Illinois Council on Food and Agricultural Research (C-FAR), Extension councils, University of Illinois, and other partner institutions. This will streamline planning for College administrators, while engaging diverse stakeholders in the ongoing process.

q Information and Reporting Systems

Conversion and improvement of the CRIS system is being accomplished. The College is evaluating options for further development of interactive and comprehensive information and reporting systems for strategic management purposes and responsiveness to partners and constituencies, using internet applications. Work done by other land-grant institutions is being considered for application to our situation.

q College Marketing

Under the auspices of the Information Technology and Communications Services unit of the College, a College marketing plan is being developed. An external marketing agency has been retained in 1999. The market research undertaken will be closely integrated with the College Planning functions to augment other stakeholder inputs.

q Illinois Research and Education Centers

In 1999, the University of Illinois Board of Trustees approved the South Campus Master Plan, an ambitious initiative to expand and modernize the field research facilities on the Urbana-Champaign campus. In 1999/2000, this initiative will be broadened to include statewide field research and education facilities, engaging Southern Illinois University, Illinois State University, and Western Illinois University to develop a comprehensive master plan for the Illinois Research and Education Complex.

Illinois Agricultural Experiment Station

Administratively, the Illinois Agricultural Experiment Station (IAES) exists within and encompasses almost all of the activity of the ACES Office of Research (OR). The mission of the IAES is “to improve and maintain the economic health of Illinois agriculture, using strategies that also protect natural resources, preserve environmental quality, satisfy consumer demand for a safe and secure food supply, maintain strong and effective communities, and promote family well-being.” Agriculture in this context is a broad term encompassing a wide range of commercial and public activities on both managed and wild ecosystems, a wide range of products and services originating on those ecosystems, and a wide range of enterprises required to produce consumer products in the form of food, feed, fiber, fuel, and chemical feedstocks

from materials that originate on those ecosystems. Those ecosystems include the farms, forests, and fisheries of the United States and other nations. In addition, the IAES administers research on human development, including child development, family ecology, and education, and on community development. The IAES is expected to conduct basic, developmental, and adaptive research in support of all these activities and to interface seamlessly with the many mechanisms of education and technology transfer. IAES conducts human and community development research that is important to all citizens. Outsiders are surprised to learn that IAES research responsibility includes an entire building devoted to child development and family ecology research.

Even within a narrowly construed theme of food and agriculture, the scope of IAES research programs is enormous. The crosscutting disciplines of natural resources and environmental sciences and the human and community development theme extend the scope even further. Sometimes, this makes it difficult for IAES decision-makers to decide where IAES programs leave off and other research programs begin.

The IAES strategies for dealing with the challenge of scope are to: 1) encourage open and constructive discussion of issues among scientists, administrators, and stakeholder groups, 2) recognize that no institution can afford to mount excellent programs in all the specialties that fall within the themes described above, 3) form alliances with other programs, colleges, institutions, agencies, and organizations to accomplish important goals that ACES cannot accomplish alone, and 4) be as flexible as practical, given the realities of limited resources, stakeholder expectations, and institutional realities.

There are other challenges associated with the enormous and expanding scope and high degree of specialization in IAES research. Many of the new people that will enter ACES and IAES as faculty, professionals, staff, students, and administrators in the future are unlikely to have a “natural” connection through family ties or past employment with agriculture, even in the broad sense. Because of their focus, many of them will have little understanding for the complex path by which the output of that research finds fruition in practice, even though they do research of fundamental importance to agriculture. This could cause a serious disconnect between IAES and its stakeholders. Strategies to address that potential problem have not as yet been considered by ACES, but will become very important in the future.

Recent Trends in Resources

Reductions in real dollar support in the form of federal and state base funds led to a reduction in research faculty FTEs from 138 to 118 between 1986 and 1999. The downsizing of IAES faculty in recent years has been associated with increasing dependency on non-recurring funds for operational support. Under these circumstances, state funds were leveraged to create a larger program than would otherwise be possible. While this is good in many respects, it changes the nature of the research operation, shifting strategic decisions from ACES scientists, administrators, and most stakeholders to benefactors, grantors, and contractors. Heavy reliance on non-recurring funds can preclude long-term projects and lead to a preponderance of short-term, fragmented research efforts that are slow in coming to practical fruition.

During the period 1983 to 1998, gifts, grants, contracts, and sales increased from about 36 percent to about 50 percent of the research budget. The most significant real dollar increase was in industry gifts and grants. By 1995, the annual expenditures of the IAES were roughly 38 percent recurring state funds, 12 percent federal formula funds, and 50 percent gifts, grants, contracts, and sales.

State Resources

After a long period of decline in real dollar support for food and agriculture research at the University of Illinois at Urbana-Champaign (UIUC), the IAES is positioned to grow and improve, perhaps more so than at any other point in its history. In 1994, leaders in the food and agricultural sector sent a message across the state: An eroding public research base puts the Illinois food and agriculture sector at risk. While Illinois ranked fourth or fifth in gross agricultural production in the nation, it ranked 22nd in overall funding and 29th in state funding for food and agriculture research. Triggered by this concern, the Illinois Council on Food and Agricultural Research (C-FAR) was organized. C-FAR evolved from discussions among organizations, agencies, and concerned individuals. C-FAR is working to increase state funding for food and agricultural research. At the same time, C-FAR communicates the needs and priorities of member organizations to Illinois' four public agricultural research institutions: the University of Illinois, Southern Illinois University-Carbondale, Western Illinois University, and Illinois State University.

The Illinois Farm Bureau, the Audubon Council of Illinois, the Illinois Dietetic Association, the Horseradish Growers of Illinois, and 48 other equally diverse state organizations found common ground in C-FAR. Many of these organizations disagree sharply on various agricultural issues, but they agree on the need for sound, research-based information to inform debates, discussions, and decisions on those issues. A \$100,000 grant from the W.K. Kellogg Foundation supported C-FAR in developing its research management and advocacy role in Illinois. Last year, the foundation was intrigued enough by the achievements of C-FAR to award a supplemental \$50,000. The foundation sees this as a model for productive stakeholder/university relationships.

Responding to C-FAR, the Illinois legislature passed the Food and Agricultural Act of 1995. The legislation sets parameters for distributing appropriated funds to the four public agricultural research institutions of Illinois and requires the institutions to work closely with C-FAR to build and support a broad program of food, agricultural, and related natural resources, environmental, and rural development research and outreach. Since then, the Illinois legislature has allocated additional recurring funds in \$3 million increments, with \$15 million allocated for FY 2000.

Administrators and faculty at the four C-FAR research institutions meet often with C-FAR representatives and attend C-FAR meetings, including numerous meetings of working groups organized around the five C-FAR general goals and an annual research planning retreat. In turn, the institutions invite C-FAR members to attend faculty meetings and to serve on external advisory boards, proposal review panels, and other committees. This ongoing exchange of perspectives and information helps to shape the annual call for C-FAR proposals and, later, the evaluation of submissions. It provides stakeholders with many opportunities for input in determining the research agenda.

University of Illinois Extension

University of Illinois Extension is also administratively located in the College of Agricultural, Consumer and Environmental Sciences (ACES). Faculty members in the College of Veterinary Medicine and the College of Applied Life Studies also hold extension appointments. A number of major changes have recently been instituted or are in the process of being put into place.

In 1996, the Chancellor of the University of Illinois at Urbana-Champaign appointed a Commission on Extension to study and make recommendations on programming, structure, and the future of the Cooperative Extension System. The Commission was made up of persons holding leadership positions in the State of Illinois and representing the various stakeholders of the Cooperative Extension System. By the end of 1996, the Commission presented its report to the Chancellor. The Commission indicated that University of Illinois Extension is “a vital part of the University’s outreach and education programs and provides essential information for people across the state of Illinois.” The Commission made the following recommendations to strengthen University of Illinois Extension and position it for the twenty-first century:

- q Enhance local ownership of University of Illinois Extension. The success of University of Illinois Extension will be measured by its ability to assess the needs of local citizens and to deliver programs and information that are meaningful and relevant.
- q Focus on four core program areas: agriculture and natural resources, youth development and 4-H, family and consumer sciences, and community and economic development.
- q Establish a minimum professional staff at all local Extension offices.
- q Create a seamless organization; citizens must have direct access to subject matter expertise.
- q Improve the system for professional development for staff and evaluation for staff and programs.
- q Enhance the information and communications technologies.
- q Strengthen vital partnerships. University of Illinois Extension must maintain its vital partnerships with the College of Applied Life Studies and Veterinary Medicine and continue to expand its influence through partnerships and collaborations with other units of the University, community colleges, other universities and colleges, businesses and firms, organizations, associations, and public agencies.
- q Seek adequate, stable, and flexible funding for University of Illinois Extension.

Each of these recommendations is being addressed, and many recommendations have been successfully implemented. For example, significant resources have been allocated to improving professional development of staff and other personnel, including volunteers. Special professional development programming is being planned for local council members. A major

initiative is ongoing to upgrade the communications technology in all U of I Extension Field offices, and on campus as well.

A vigorous effort has been undertaken to strengthen the resource base within the state of Illinois. University of Illinois Extension has seen a significant and steady growth of local financial support for its efforts. Tax referenda to support local extension activities have been passed by 80 counties. Local Extension budgets have grown from 14.1 percent of total Extension budget in 1990 to 21.4 percent in 1999. State funds make up 54.2 percent of the Extension budget for FY99, and Smith Lever 3b-c funds account for 18.9 percent of the FY99 budget.

CSREES GOAL 1: An agricultural production system that is highly competitive in the global economy

Statement of Issues to be Addressed

About one million Illinois workers are employed in the food and fiber system, ranking it as one of the top states in dependency on agriculture. In addition to farming, Illinois is a leading state in agricultural-related industries, such as soybean processing, meat packing, dairy manufacturing, feed milling, vegetable processing, machinery manufacturing, foreign exports, and service industries. Illinois often ranks first in soybean production, second in corn production and fourth in hog production. Generally, it is one of the top five states in cash income, crop cash receipts and total value of farm real estate.

In 1997, total cash receipts from farm marketings in Illinois totaled 9.3 billion dollars, which was two and 2.5 percent above 1996. Crop cash receipts in Illinois in 1997 totaled 7.3 billion dollars, which was 5 percent more than 1996 and placed Illinois second among all states in total crop cash receipts in 1997. Livestock and livestock products cash receipts in Illinois in 1997 totaled 1.9 billion dollars, which was 6 percent below 1996 and placed Illinois 18th among all states in total livestock and livestock products cash receipts in 1997.

In 1997, corn accounted for 38.0 percent of the total cash receipts in Illinois and soybeans accounted for 33.5 percent. All other crops combined accounted for 7.6 percent of the total cash receipts in Illinois. Compared to 1996, cash receipts for corn increased 8 percent and cash receipts for soybeans increased 23 percent in 1997.

In 1997, hogs accounted for 10.9 percent of the total cash receipts in Illinois while cattle and calves accounted for 5.5 percent and dairy products accounted for 3.3 percent. All other livestock combined accounted for 1.2 percent of the total cash receipts in Illinois in 1997. Compared to 1996, cash receipts decreased 8 percent for hogs, 8 percent for cattle and 10 percent for dairy products in 1997.

Source: Illinois Agricultural Statistics Service, 1997, 1998 Annual Summaries

<http://www.nass.usda.gov/il/1998/98008.htm>

<http://www.nass.usda.gov/il/1997/9708.htm>

Illinois' research and extension programs are based in the U of I College of Agricultural, Consumer, and Environmental Sciences (ACES), with additional subject matter support from partners in the U of I College of Veterinary Medicine and College of Applied Life Studies. Thousands of agribusiness professionals serve as program collaborators throughout Illinois. Commodity associations, producer organizations and other agriculture industry groups provide financial resources and other types of support. The College of ACES seeks to provide support to Illinois' agriculture industry through research and outreach programs which increases the industry's competitiveness through the production of new and value-added products and improved productivity.

The issues addressed by research and outreach are framed by input from multiple stakeholder sources. One of the most influential is the Illinois Council on Food and Agricultural Research

(C-FAR). C-FAR brings the University of Illinois together in partnership with three other public universities in the state, as well as organizations interested in agriculture, the environment, food, and food processing. Membership includes producer organizations and members of the general public. Based on stakeholder input, the focus for research and outreach relative to CSREES Goal 1 is:

q **Identify demand, and develop and advance technologies to expand markets for Illinois agricultural products to enhance profitability.**

q To understand the current and potential value, in terms of both demand and supply, of traits within agricultural products.

q To evaluate and compare alternative marketing strategies.

q To determine the reason for, and implications of, the changing structure of agriculture.

q **Discover and develop alternative practices, products, and enterprises of the Illinois food and agricultural system that facilitate sustainable resource use and economic vitality for healthy rural and urban communities.**

q Enable on-farm producers to carry out and profit from more steps in processing and marketing of agricultural products by providing tools and information for producers.

q Identify alternative agricultural enterprises with potential economic benefit. Analyze alternative agricultural enterprises for feasibility and sustainability, and facilitate their development (i.e., technical assistance, financial planning, education, marketing, regulation, etc.)

q Create replicable integrated models which develop agricultural systems and enterprises that will foster the stewardship of existing and future natural resources, providing healthy foods and agricultural products, and related economic benefits.

q Build a rural socioeconomic environment supporting food and agriculture.

q Facilitate partnerships that enable producers to gain economies of scale.

q **Increase the capacity of Illinois food, crop, and animal systems to address changing world food and agricultural demands.**

q Enhance the efficiency of production systems.

q Develop and adapt agricultural production and management systems to address changing regulatory requirements.

- q Increase productivity and efficiency of downstream processes.
- q Increase productivity of food, grain, and livestock systems.

Performance Goals

q **Research Output Goal**

- q Number of research projects initiated, continued, and/or completed addressing agriculture competitiveness.

q **Extension Output Goals**

- q Number of events/participants in “train-the-trainer” workshops.
- q Number of face-to-face teaching contacts.
- q Number of Web page hits.

q **Research Outcome Goal**

- q Increased knowledge base from which to address agriculture competitiveness issues.

q **Extension Outcome Goals**

- q Changes in knowledge, skills, and practices. Number of producers impacted by “wholesalers” of research and extension information.

Major Efforts

The major efforts of the Illinois Agriculture Experiment Station and University of Illinois Extension are housed and guided by the College’s academic departments, along with support from the College of Veterinary Medicine.

q **Farm Incomes and Rural Communities through Specialty Products**

Almost 80 percent of cash receipts in Illinois is from crops. An example of the integrated approach being used to improve farm incomes in Illinois is through specialty corps. Based on bioengineering, the newer corn and soybean varieties have unique traits that allow farmers to earn higher premiums and take advantage of contracts and other marketing alternatives. A multifaceted research project is underway to explore the potential for specialty crops around the state. This effort involves University of Illinois and Western Illinois University researchers, Extension, producers and agriculture leaders.

The project has a three-pronged approach: creating pilot projects for evaluating specialty crop processing and marketing options; researching production and post-harvest technologies for the crops; and exploring potential for collaboration among farmers to organize value-added processing and alternative marketing arrangements. The strategy is to work in three pilot areas for one year, observe and refine the process and then move to other areas to apply the process to similar or new specialty corps. Specialty livestock may be included in future years. The web site for the project is <http://web.aces.uiuc.edu/value/>.

q Rural Route 2

While corn and soybeans are the mainstay of farm cash receipts in Illinois, the state often ranks fourth in the nation in hog production. Recent lows in the hog market lead the College to initiate its Rural Route 2 program, including a 1-800 confidential hot line, to assist producers in response to the financial stress of low commodity prices (see website at

<http://www.extension.uiuc.edu/ruralroute>). While Extension has the lead in this outreach effort, it is only possible through the support of the College's faculty and researchers. Faculty and Extension field staff are responding working together in this effort (for examples note the joint extension/ faculty authorship of "Are Farmland Cash Rent Changes on the Way?" <http://w3.aces.uiuc.edu/ACE/FarmIncome/rent.html>.

While one can be hopeful that farm prices will eventually help relieve at least part of the crisis, the issues of the restructuring of agricultural production are seen as long term.

Integrated Activities

Extension program delivery teams are closely linked and cross-linked to the departments which serves to foster interdisciplinary cooperation and integration of research and outreach programs. For example, the Animal Systems Team has eleven field-based educators who conduct educational programs throughout the state, often on a multicounty basis. These educators have expertise in animal science and related areas such as farm management. This team also includes department-based staff from the Departments of Animal Sciences, Agriculture Engineering, Crop Sciences, and Agriculture and Consumer Sciences. Two team members are faculty in the College of Veterinary Medicine. One specialist holds a joint appointment with the University of Illinois and Purdue University. One function of the campus-based faculty is to help link extension efforts with the ongoing research at the University of Illinois and elsewhere. Input from extension helps inform individual researchers and their departments.

Similar coordination occurs between departments and the other extension teams addressing CSREES Goal 1 initiatives: Crop Systems, Farm Business Management and Marketing, Integrated Pest Management, and Natural Resource Management.

Target Audiences

The beneficiaries (target audiences) of these activities include those directly involved in the food and agricultural sector in Illinois and nationwide, rural communities, and the general population. Outreach programs specifically target producers and those who wholesale information to producers (e.g., agribusiness).

Program Duration

Long term.

Allocated Resources

See Appendix A.

CSREES GOAL 2. A safe, secure food and fiber system.

Statement of issues to be addressed

q Food Safety

Food safety is an issue for all families regardless of household resource level and affects producers, processors and consumers. Concerns regarding food safety have been expressed by a number of stakeholders. The Illinois Council for Agricultural Research (C-FAR) devotes a whole section to food safety in its priorities for research and outreach:

- q Enable consumers to make informed and healthful dietary choices from a nutritious, high quality and safe food supply.
- q Enhance and determine the nutritional quality, safety and human health benefits of various food products through the use of both biotechnological and conventional methods, and develop intervention strategies for hazard reduction.
- q Determine the requirements and develop improved methods for food production, food processing, distribution systems and food services that will ensure safe and high quality food for consumers.
- q Evaluate the differences in nutritional quality and safety between food grown and produced conventionally and food grown and produced under alternative systems, including organic, free-range and locally grown.
- q Develop effective methods to communicate nutrition, food quality and food safety to diverse audiences.

College of ACES scientists are committed to the development of Hazard Analysis and Critical Control Point (HACCP) systems. Researchers are working with meat processors to develop a better understanding of how handling practices affect meat safety at small facilities and, more importantly, what training is needed to help small processing plants comply with new federal regulations. Recognizing that some 400 Illinois meat processors needed help to comply with the HACCP requirements, researchers from the Departments of Animal Science and Food Science and Human Nutrition are creating a model HACCP program through working with a cooperating meat plant. The model will be used in workshops to help small meat processing plants develop HACCP plans.

The data from this research will allow the researchers to assess if new practices and procedures reduce microbes on meats. If they do, retailers will benefit by having a cleaner product with a longer shelf life, and consumers will benefit by having a safer product.

Other extension and outreach programming includes working with food processors (e.g., meat processors) and consumers of all ages. Other programs target the elderly and school children as well as quantity food preparers such as school cooks. Programs target changes in knowledge,

skills and practices. Examples of program delivery approaches include master food preservers, cooperative educational efforts with schools, training of food handlers, processors, and agricultural producers.

q **Food Security**

Food security involves issues of supply and access. While all citizens have an interest in food security, it is of immediate interest to limited-resource audiences.

The College of ACES seeks to address issues of food security at the international, national, state, and local levels through scholarly activity and extension and outreach programming. The College's World Food and Sustainable Agriculture Program (<http://www.aces.uiuc.edu/~ILwfood>) specifically addresses international issues which impact both Illinois and the world.

Closer to home, one in five Illinois children live in poverty and do not have regular access to affordable, nutritious food. College efforts target changes at the individual, family, local, state, and national levels to improve food security.

Performance Goals

q **Food Safety**

q **Research Output Goal**

q Number of research projects initiated, continued, and/or completed addressing food safety.

q **Extension Output Goal**

q Number of persons participating in food safety educational programs.

q **Research Outcome Goal**

q Increased knowledge base from which to address food safety issues at the producer, processor, and consumer levels.

q **Extension Outcome Goal**

q Changes in knowledge, skills and practices of processors and consumers relative to food safety.

q **Food Security**

q **Research Output Goal**

q Number of research projects initiated, continued, and/or completed addressing food security.

q **Extension Output Goal**

q Number of communities, organizations, agency personnel, and citizens participating in food security programs.

q **Research Outcome Goal**

q Increased knowledge base from which to address food security issues.

q **Extension Outcome Goals**

q Number of community food security councils created.

q Actions taken by communities, organizations and citizens to improve food security.

Major Efforts

q **Food Safety**

As noted in the introduction to this goal, there is ongoing research to make implementation of federal and state HACCP requirements a possibility for small processors. Outreach programs are being implemented to assist these small operations to comply with the requirements.

Food safety education for the general public is provided through news releases and responses to food safety and food preservation questions from the general public. Food preservation questions are fielded by both nutrition and wellness educators and volunteer master food preservers. Additionally, 30 percent of the Family Nutrition Program (FNP) is devoted to food safety education. Partners in this effort include local schools and other local organizations, the Illinois Beef Council and University of Illinois Extension.

q **Food Security**

As noted earlier, research and extension work to address food security issues of both international and local significance. Locally, extension does welfare simulations with agency personnel and public policy simulations on food security (Copin County) with interested community stakeholders. These programs often lead to the formation of local Family Food Security Councils who devise local action plans for ensuring community food security.

Externally, our partners in this effort are members of the State Interagency Nutrition Council which includes Department of Human Services (Food Stamps, WIC, Commodity Foods, Homeless Shelter Services, Children and Family Service and Aging), Department of Education (including school lunch, summer food programs, and all child care food programs), the Illinois Hunger Coalition (provides advocacy for all programs), and Community Action Agencies.

Integrated Activities

These programs are planned and implemented through collaborative efforts in the College of ACES, specifically the Department of Food Science and Human Nutrition, the Department of Human and Community Development, the Department of Agriculture and Consumer Economics, the College of Social Work, local extension councils and our Grants and Contracts Office. The interfaces with College of ACES departments provide the linkage between ongoing research within the College and elsewhere with extension programming. The extension teams responsible for this programming include members who hold faculty and research appointments in their respective departments.

Target Audiences

The general public, food processors and handlers, local leaders.

Program Duration

Long-term.

Allocated Resources

See Appendix A.

CSREES GOAL 3. A healthy, well-nourished population.

Statement of Issues to be Addressed

There are strong interrelationships between diet and health. Research conducted at the University of Illinois College of Agricultural, Consumer and Environmental Sciences seeks to further understand these interrelationships while improving the quality of food and food choices. Since research in isolation is of little value in improving an individual's health, University of Illinois Extension seeks to help consumers improve the quality of their diets through improved food choices.

The research agenda of the College and the focus of extension programming are heavily influenced by multiple stakeholder groups. Much of the focus is captured by the goals expressed by the Illinois Council on Agricultural Research (C-FAR) for research and outreach:

- q Enable consumers to make informed and healthful dietary choices from a nutritious, high quality and safe food supply.
- q Enhance and determine the nutritional quality, safety and human health benefits of various food products through the use of both biotechnological and conventional methods, and develop intervention strategies for hazard reduction.
- q Determine the requirements and develop improved methods for food production, food processing, distribution systems, and food services that will ensure safe and high quality food for consumers.
- q Develop and test effective methods to modify and improve dietary behavior in the community and in individuals.
- q Determine the health benefits of physiologically-active components in health and disease at all stages of life.
- q Evaluate the differences in nutritional quality and safety between food grown and produced conventionally and food grown and produced under alternative systems, including organic, free-range and locally grown.
- q Develop effective methods to communicate nutrition, food quality and food safety to diverse audiences.

Performance Goals

- q **Research Output Goal**
 - q Number of research projects initiated, continued, and/or completed.
- q **Extension Output Goals**
 - q Number of events/participants in "train-the-trainer" workshops.

- q Number of face-to-face teaching contacts.
- q Number of Web page hits.
- q **Research Outcome Goal**
 - q Increased knowledge base.
- q **Extension Outcome Goals**
 - q Changes in knowledge, skills, and practices.
 - q Number of citizens impacted by “wholesalers” of research and extension information.

Major Efforts

Most of the College's research and outreach efforts in the area of human nutrition are lead by the Department of Food Science and Human Nutrition and the Division of Nutritional Sciences.

The formal interrelation between extension and the College's research efforts in human nutrition is provided through extension's Nutrition and Wellness Team. This team includes faculty members from the Department of Food and Nutrition Science. In addition to jointly planning programs, the extension team and faculty collaborate on joint research projects such as the Cardiovascular Risk Reduction Program for Premenopausal Women Project. This two-year project is to examine the effectiveness of educational interventions on dietary and health practices.

Activities that are Integrated

As noted above, there are direct connections between the Department of Food and Nutrition Science and the extension program team charged with the delivery of nutrition education. This same interconnectedness also exists between the Departments and two specially funded programs: the Expanded Food and Nutrition Education Program funded through Smith-Lever 3d funds, and the Family Nutrition Program funded by the Food and Nutrition Service.

Target Audiences

Target audiences include the general public, food processors, limited-resource families, and the elderly.

Program Duration

Long term.

Allocated Resources

See Appendix A.

CSREES GOAL 4. Greater harmony between agriculture and the environment.

Statement of Issues to be Addressed

College of ACES research and outreach programming in the area of production agriculture seeks to integrate environmental and production agriculture concerns, making it difficult to disaggregate production oriented CSREES Goal 1 from CSREES Goal 4. Long-term agriculture production requires the adoption of policies, technologies and practices which insure the protection of the environment.

The College of ACES works closely with the U of I College of Veterinary Medicine and College of Applied Life Studies. Additional partnering is ongoing with other University of Illinois units and other institutions as well.

Other partners are the Illinois Department of Health, the Illinois EPA, the Illinois Department of Agriculture, and county and municipal governments. Extension works with commodity associations, producer organizations, agriculture industry groups, and environmental organizations.

One such partnering organization is the Illinois Council on Agriculture Research (C-FAR). C-FAR's research and outreach focus calls for research in agriculture production which is "sustainable:"

- q **Foster the sustainable use of natural resources in Illinois.**
 - q Develop integrated production systems that protect and enhance air, soil and water.
 - q Promote permaculture land management for long-term sustainable agriculture.
 - q Develop geographically adapted crops and crop rotation practices.
 - q Reduce the adverse effects which may result from pesticide and nutrient inputs.
 - q Develop assessment tools for evaluating environmental, social and economical watershed consequences from proposed land use changes.
 - q Develop economic methods that will improve utilization of animal and plant production system by-products in an environmentally responsible manner.

<http://www.ag.uiuc.edu/~c-far/research/focus.html>

Performance Goals

q Research Output Goals

- q Number of research projects initiated, continued, and/or completed addressing the harmony between agriculture and the environment.

q Extension Output Goals

- q Number of events/participants in “train-the-trainer” workshops.
- q Number of face-to-face teaching contacts.
- q Number of Web page hits.

q Research Outcome Goal

- q Increased knowledge base from which to address harmony between agriculture and the environment.

q Extension Outcome Goals

- q Changes in knowledge, skills, and practices.
- q Number of producers impacted by “wholesalers” of research and extension information.

Major Efforts

As earlier noted, efforts in research and extension combine concerns regarding efficient agriculture production and sustainability of agriculture (harmony with the environment). As noted under Goal 1, each of the College's departments which focus on agriculture production see production and sustainability as a joint, integrated concern.

An example of one such integrated approach is pork production in confinement facilities. There are multiple research projects to increase production efficiency while minimizing the potential for negative environmental impacts. Research and extension efforts focus on efficient production while minimizing risks to worker health, reducing odor and appropriate use of swine waste as a source of fertilizer. This integrated research and extension programming draws on staff in the departments of Agricultural and Consumer Economics, Agriculture Engineering, Animal Sciences, and Crop Sciences.

Other integrated approaches which impact crop production are Illinois Tillage Seminars and In-Depth Soil and Water Workshops. Both programs target farmers and agriculture industry representatives and stress maximizing profits while protecting soil, water, plant, and animal resources. These programs are lead by the Extension Natural Resources Team with support from the Crop Sciences Team.

Integrated Activities

As has been noted previously, integration of research and extension has been an outcome sought when extension was reorganized in the early 1990's. Both the Natural Resource Management and the Crop Sciences extension teams have members based in various College of ACES departments. The departments represented on the two teams include Natural Resources and

Environmental Sciences, Agricultural Engineering, Crop Sciences, and Agricultural and Consumer Economics. These connections serve to provide linkages which influence both ongoing research programs and extension programs.

Target Audiences

The beneficiaries (target audiences) of these activities include those directly involved in the food and agricultural sector in Illinois and nationwide, rural communities, and the general population. Outreach programs specifically target producers and those who wholesale information to producers (e.g., agribusiness).

Program Duration

Long-term.

Allocated Resources

See Appendix A.

CSREES GOAL 5. To increase the capacity of communities, families and individuals to improve their own quality of life.

Statement of issues to be addressed

The College of ACES recognizes that among Illinois' greatest resources are its human resources and communities. Research and outreach programs within the College assist Illinois communities, families and individuals through economic and community development, family economics, parenting, and youth development.

q Community and Economic Development

Small towns and rural American communities are facing new challenges and difficult choices. The communities have lost most of their political voice at the federal level, and state government is no longer able to supply all of the services once provided through federal dollars. This leaves local communities to face mounting problems. Such problems must be confronted at the local level, by local people, using local resources. This is not a job to be left to elected officials. All citizens must play their part in the future of their community.

Although the strong economy has had an impact in rural areas, many small communities and rural areas have experienced economic slowdowns, reduced personal incomes among residents, and fewer goods and services offered locally. Many communities in Illinois have lost jobs in the agricultural, manufacturing and mining sectors. While jobs in the service sector may have replaced many of them, these new jobs often do not provide wages or benefits at previous levels.

Societal and economic changes including welfare reform have placed changes and stresses on families. Parenting skills and childcare are challenges facing many families. Adult dependent care is an issue as our population ages.

q Parenting

The Illinois Department of Children and Family Service's Child Abuse Hotline receives over 1,000 calls each day. Research shows that parents, in particular those who abuse their children, have inappropriate expectations about children's abilities. They lack knowledge about what children are really like, and often have attitudes that are harmful to competent parenting when compared to non-abusing parents. Research also shows that parenting education is most effective at three life stages: following the birth of a child, prior to a child entering school and during adolescence.

q Family Finances

Family finances are critical to the well-being of Illinois families. The management of consumer debt is of critical concern to families at all life stages. Older citizens, especially older women, face problems in making ends meet.

Credit is readily available, and all age groups and income levels are encouraged to use it. One hundred and ten million Americans hold over one billion credit cards. According to the Wall Street Journal, during May 1999 total consumer installment debt totaled \$1.333 trillion and American consumers' saving rate hit a record low of **negative** 1.2 percent.

q **4-H/Youth Development**

Positive youth adult relationships are key to positive youth development. Drawing on the research base of the College of ACES and other institutions, the 4-H/Youth Development program in Illinois is a national leader in the number of youth served.

Performance Goals

q **Research Output Goal**

- q Number of research projects initiated, continued, and/or completed addressing community development, family economics, parenting and/or youth development issues.

q **Extension Output Goals**

- q Number of events/participants in "train-the-trainer" workshops.
- q Number of face-to-face teaching contacts.
- q Number of Web page hits.

q **Research Outcome Goal**

- q Increased knowledge base from which to address community development, family economics, parenting and/or youth development issues.

q **Extension Outcome Goals**

- q Changes in knowledge, skills and practices by communities and/or citizens.
- q Number of citizens impacted by "wholesalers" of research and extension information.

Major Efforts

q **Strengthening Communities and Families**

Illinois communities are served through the outreach of extension's Community Leadership and Volunteerism Team. This team is supported by research effort through the College of ACES's Laboratory for Community and Economic Development (<http://www.ag.uiuc.edu/~lced/main.html>) which coordinates research and outreach programming. The Program for Rural and Family Development Research (<http://www.aces.uiuc.edu/~hcd/rural/welcome.html#research>) sponsors and conducts applied research on human and family development in collaboration with organizations serving rural Illinois communities.

q **Family and Consumer Economics**

Research agendas in the department of Agriculture and Consumer Economics support the work of extension's Consumer and Family Economics team. Faculty conduct research and work with the extension team to develop needed curricula. One example is the development of the "All My Money" program which is a train-the-trainer program for agency personnel.

q 4-H/Youth Development

Over 200,000 youth are served annually by the Illinois 4-H programs. University of Illinois Extension 4-H/youth programs will focus heavily on strengthening both the club structure within the state of Illinois as well as strengthening the curriculum of educational programs being offered both within a club context and in association with school and other organizational programs. Special emphasis will remain on strengthening self-esteem, leadership, and cognitive learning. Furthermore, programming related to fostering entrepreneurship, community service, citizenship, work force preparation, and inter-cultural programming will be major components of programming efforts. This dual challenge of strengthening the 4-H club structure and curriculum can only be accomplished through building on 4-H's traditional strength of being centered in the research base of the land grant system.

Integrated Activities

The extension programs described above are firmly rooted within the departmental structure of the College of ACES. As noted in previous Goals, there is an integration between faculty in the College's departments and the extension teams charged with program delivery. For much of Goal 5, the research base comes from two departments: Human and Community Development and Agricultural and Consumer Economics. The 4-H Youth program draws on all seven of the College's departments for faculty and researcher help in developing curricula which is research-based.

Target Audiences

The beneficiaries (target audiences) of these activities include the general population, communities, agencies, and organizations serving families and youth.

Program Duration

Long term.

Allocated Resources

See Appendix A.

Stakeholder Input Process

All programs in the college of ACES are continually subjected to a diverse process of stakeholder input. The College, the Office of Research, the Office of Extension and Outreach, academic departments, and many programs within the College have advisory groups and councils made up of stakeholders. In this context, stakeholders may represent organized entities in the state with a particular interest in a program area, but they also include individual stakeholders.

The office of research has an especially powerful process of stakeholder input through the C-FAR process (described earlier in this document). C-FAR represents stakeholders throughout the state such as organizations dealing with environmental quality and resource conservation issues, sustainable agriculture groups, commodity groups, and rural development interests. The membership of C-FAR has had an ongoing, very active and very influential role in defining needed research and outreach outcomes for the work of the College.

Extension, in addition to its advisory council structure, from local (county-level) councils through regional councils and a statewide council also has other mechanisms in place for continuous stakeholder input. Local councils are volunteers nominated locally and appointed by the College to provide advice on educational programming. The makeup of the councils reflects local populations and local participation in Extension programs. In addition, University of Illinois Extension has an ongoing process of program planning. In this process, on a rotating annual basis, one of the four core program areas (Agriculture and Natural Resources, Nutrition, Family and Consumer Sciences, 4-H Youth and Development, Community and Economic Development) is reviewed in-depth in terms of programming needs and program delivery. The program planning process starts at the local level and is characterized by systematic collection of information from a wide variety of sources and from stakeholders who are particularly interested in program delivery in that area. During the program planning process, special effort is made to include representatives from diverse and potential audiences in the program planning process.

Research Review Process

Research and outreach projects and programs have always been exposed to a review process. Research projects undergo a merit review at the departmental level. Appendix B contains a copy of the memorandum that was sent out in August 1998 to all departments to remind them of the merit review process.

In Extension all projects are reviewed at several points in the system. Whenever local programming involves the delivery of programming by Extension educators, as it usually does, the programs are reviewed by the teams, including specialists. In addition, during annual performance review much attention is given to programming quality, and department heads are involved on a bi-annual basis in reviewing the disciplinary competence of the programming delivered by the educators associated with those departments. Finally, Extension programs are continuously evaluated in terms of inputs, program content and delivery, outputs and outcomes.

While not every project is evaluated in this fashion, programming in all core program areas is reviewed extensively on an annual basis.

Multi-State Research and Extension Activities

Pending further specification of the guidelines with regard to multi-state research and extension activities, only a brief review will be given in this section. University of Illinois researchers and extension specialists are engaged in numerous collaborative efforts, both with institutions within Illinois and in other states. For example, a brief review of “joint programming” with Purdue University (IN) listed 27 collaborative efforts. However, the great majority of the joint activities are based on long-standing mutual cooperation and individual agreements between specialists and educators without formal documentation.

In the research area there are also a great number of informal and marginally documented collaborations. Appendix C lists multi-state projects officially approved by the Office of Research. Appendix D lists multi-state projects that specifically involve the expenditure of Smith-Lever funds as part of the multi-state activity, over and beyond personnel time and travel. Again, there are numerous other multi-state activities funded through SmithLever funds that are not listed here because they do not involve formal agreements.

Integrated Research and Extension Activities

As indicated throughout this document, the College of ACES has engaged in a deliberate and intensive program to closely connect research and extension efforts. Outreach activities are research-based, and for research activities the college routinely evaluates potential outcomes and their application to solving the problems of the citizens of the state of Illinois, and the process of bringing research results to bear on solving those problems. There is, of course, not always a perfect match between the research capability of the College at any one time and the educational needs generated through the process of needs identification by Illinois citizens. In such instances extension specialists and educators will obtain research-based information from other land grant institutions and research centers.

Appendix A

UNIVERSITY OF ILLINOIS PLAN OF WORK FUNDING AND STAFF SUPPORT

UNIVERSITY OF ILLINOIS PLAN OF WORK - RESEARCH FUNDING AND STAFF SUPPORT							
	GOAL I	GOAL II	GOAL III	GOAL IV	GOAL V	Total	Multi-State
Total CSREES Research	3,521,077	433,910	275,852	777,830	282,133	5,290,802	1,319,141
Total Other Federal Research Funds	2,753,828	236,334	353,043	538,724	151,769	4,033,498	144,217
Total Non-Federal Funds	21,783,446	2,517,911	2,686,592	3,432,359	1,244,331	31,634,639	3,836,797
Total All Research Funds	28,028,149	3,188,155	3,315,487	4,748,913	1,678,233	40,958,937	5,300,155
Scientist Years	73	13	11	21	9	127	17
Professional and Technical Support	217	24	27	36	10	314	33
Total Staff Support	290	37	38	57	19	441	50

UNIVERSITY OF ILLINOIS PLAN OF WORK - EXTENSION FUNDING AND STAFF SUPPORT						
	GOAL I	GOAL II	GOAL III	GOAL IV	GOAL V	Total
Federal (All Sources)	2,843,794	707,057	1,541,963	1,122,843	4,901,598	11,117,255
State	6,286,735	1,563,082	3,408,796	2,482,253	10,835,893	24,576,759
Local (All Sources)	2,484,817	617,804	1,347,319	981,105	4,282,862	9,713,907
Total All Extension Funds	11,615,346	2,887,943	6,298,078	4,586,201	20,020,353	45,407,921
Professional FTE's	110	18	40	43	176	387
Paraprofessional FTE's	2	30	61	2	45	140
Total Staff Support	112	48	101	45	221	527

UNIVERSITY OF ILLINOIS PLAN OF WORK - COMBINED FUNDING AND STAFF SUPPORT						
	GOAL I	GOAL II	GOAL III	GOAL IV	GOAL V	Total
Total Funds	39,643,495	6,076,098	9,613,565	9,335,114	21,698,586	86,366,858
Total Staff Support	402	85	139	102	240	968

Appendix B

MERIT REVIEWS OF HATCH PROJECTS

University of Illinois
at Urbana-Champaign

Office of Research
Illinois Agricultural
Experiment Station
211 Mumford Hall, MC-710
1301 West Gregory Drive
Urbana, IL 61801

College of Agricultural, Consumer
and Environmental Sciences
217 333-0240
217 333-5816 *fax*
ilaes@aes.ag.uiuc.edu *email*
<http://www.ag.uiuc.edu/iaeshome.html>

24 August 1998

M E M O R A N D U M

To: Business Managers and Heads of Departments

From: Richard E. Warner – Assistant Dean
Richard Starkey – Data Management Specialist
Joseph LaTessa – Resources and Policy Analyst

Subject: Merit Reviews of Hatch Projects

As another fiscal year is on the horizon, we would like to remind you of expectations by CSREES and the Office of Research (OR) regarding merit reviews of Hatch projects. Our college has always expected that merit reviews occur at the department level, and that the list of Hatch projects forwarded to OR from departments is in part the result of such a review process. Specifically, CSREES language regarding the review process is as follows (the underlined text is our amplification):

b. Project Approval Procedures

– Merit Review

The Eligible Institution shall have the primary responsibility for determining the need, priority, and scientific feasibility of the projects proposed. Each Director, therefore, shall develop a procedure, subject to CSREES approval, for project documentation, merit review, and selection. This procedure should assure that the research project proposals are scientifically sound, relevant to society's agricultural and food needs, not duplicative of efforts undertaken elsewhere, and have been evaluated in terms of the National priorities.

A merit review process for Hatch research proposals at a participating institution should accomplished the following:

1. Insure completeness of project proposal (all items in Appendix F should be included).
2. Evaluate relevance of the proposed research.
3. Evaluate quality and scientific value of the proposed research.
4. Consider opportunities for cooperation with other individuals or units.
5. Provide opportunity for the project leader to interact with reviewers and make adjustments as appropriate.
6. Provide CSREES with an indication, project by project, that the process was followed.

To ensure compliance with the purposes of the Hatch Act and the National Agricultural Research, Extension, and Teaching Policy Act of 1977, as amended, and to provide technical assistance where

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appropriate, each project to be funded with Hatch funds, including administrative projects, must be approved by CSREES before inclusion in the Eligible Institution's Research Program and expenditure of Hatch funds thereon.

1. CSREES will review project proposals for compliance with the provisions of the Hatch Act. CSREES will review project proposals for scientific and technical adequacy, when an Eligible Institution has not provided an adequate system for internal documentation and merit review.

... CSREES Review

CSREES will also review classification coding of projects as they are approved to insure accurate identification and recording of those that address National research priorities.

2. Along with the project proposal, the following forms must be completed and submitted to CSREES [via the CRIS system]:

-transmittal letter with merit review statement

-CRIS Form AD-416, (Appendix H)

-CRIS Form AD-417, (Appendix H)

-CRIS Form 662 "Assurance Statements", (Appendix I)

3. CSREES will notify the Director of approval or disapproval of each proposed project and of any deficiencies which preclude approval.
4. Hatch funds may be expended on a project as of the effective date as indicated on CSREES Form 166 (Appendix O). Appropriate amendment of the...

As we have usually indicated in the past, we will submit a transmittal letter with our list of Hatch projects, certifying that merit reviews occur at the departmental level. It is clear that federal auditors will look for evidence (minimally, our letter of certification) that we accommodate the merit review process.

On a related subject, here is a brief update on the processing of 416/417 forms. While researchers are now able to convey their 416/417 forms on the World Wide Web (WWW), these forms are still released to CRIS through our office. Researchers should be aware that we will not release project forms to CRIS until we have received a signed copy from the department head; we consider the signed copy to indicate department approval, thereby allowing us to release forms to CRIS. Joe LaTessa in our office will inform departments of the status of entered forms via a weekly e-mail, listing projects that have been entered on the WWW but not forwarded to CRIS. A more detailed memo is forthcoming.

Thank you for attending to these important details. Feel free to contact us if you have any questions.

c W. D. Adams
 S. G. Pueppke
 N. Rader

Appendix C

UNIVERSITY OF ILLINOIS PLAN OF WORK MULTI – STATE RESEARCH PROJECTS

Regional: XX-XXX Project: ILLU-01-0604

Principal Investigator: S. Pueppke

Title: Illinois – Missouri Biotechnology Alliance

Cooperating States: MO

Regional: NC-007 Project: ILLU-15-0325

Principal Investigator: T. Hymowitz

Title: Plant Germplasm and Information Management and Utilization

Cooperating States: IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI

Regional: NC-007 Project: ILLU-65-0350

Principal Investigator: G. Kling

Title: Introduction, Maintenance, Evaluation, and Utilization of Plant Germplasm

Cooperating States: IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI

Regional: NC-062 Project: ILLU-70-0316

Principal Investigator: M. Kuhlenschmidt

Title: Enteric Diseases of Swine and Cattle: Prevention, Control and Food Safety

Cooperating States: OH, MI, IN, AZ, MN, KS, IA, NE, SD, WA, NC, MO, ND, PA

Regional: NC-094 Project: ILLU-65-0324

Principal Investigator: S. Hollinger

Title: Climate and Agricultural Landscape Productivity Analysis and Assessment
In the North Central Region

Cooperating States: IN, MO, ND, IA, MI, NE, WI, KS, OH, SD, MN

Regional: NC-113 Project: ILLU-35-0307 Principal Investigator: D. Kesler

Title: Methods To Increase Reproductive Efficiency In Cattle

Cooperating States: IA, KS, MI, MO, OH, WI

Regional: NC-125 Project: ILLU-65-0346

Principal Investigator: H. Wilkinson

Title: Biocontrol of Soilborne Plant Pathogens

Cooperating States: IN, IA, KS, MI, MN, NE, ND, OH, WI

Regional: NC-125 Project: ILLU-15-0353

Principal Investigator: D. Eastburn

Title: Biocontrol of Soilborne Plant Pathogens

Cooperating States: IN, IA, KS, MI, MN, NE, ND, OH, WI

Regional: NC-129 Project: ILLU-70-0358
Principal Investigator: W. Haschek-Hock
Title: Fusarium Mycotoxins In Cereal Grains
Cooperating States: GA, IN, IA, KS, MI, MN, MO, NE, ND, WI, PA

Regional: NC-131 Project: ILLU-35-0331
Principal Investigator: R. McKusker
Title: Molecular Mechanisms Regulating Skeletal Muscular Growth and Differentiation
Cooperating States: AL, AZ, CA, IN, IA, MI, MN, NE, NY, OH, SD, WA, WI

Regional: NC-140 Project: ILLU-65-0318
Principal Investigator: M. Kushad
Title: Rootstock and Interstem Effects On Pome and Stone Fruit Trees
Cooperating States: AZ, AR, CA, CO, GA, KY, MD, MA, ME, NJ, NY, NC, OR, PA,
SC, UT, VT, VA, WA, IN, IA, KS, MI, MN, NE, ND, OH, SD, WI

Regional: NC-142 Project: ILLU-15-0390
Principal Investigator: F. Below
Title: Regulation of Photosynthetic Processes
Cooperating States: AZ, ND, FL, IA, KS, MI, MN, MO, NE, NC, NV, OK, OR, PA,
WA, WI

Regional: NC-168 Project: ILLU-35-0323
Principal Investigator: M. Grossman
Title: Advanced Technologies For the Genetic Improvement of Poultry
Cooperating States: AL, AR, CA, DE, IN, IA, MD, MI, MN, NC, OH, VA, WI

Regional: NC-170 Project: ILLU-65-0369
Principal Investigator: M. Raheel
Title: Occupational Safety and Health Through the Use Of Protective Clothing
Cooperating States: CA, GA, IA, MD, MI, NE, NY, OK, NE, DC

Regional: NC-185 Project: ILLU-35-0364
Principal Investigator: J. Clark
Title: Metabolic Relationships in Supply of Nutrients For Lactating Cows
Cooperating States: AL, AZ, CA, FL, IN, IA, KS, KY, MD, MI, MN, MO, NH, ND,
OH, PA, SD, UT, WA, WI

Regional: NC-189 Project: ILLU-35-0348
Principal Investigator: D. Faulkner
Title: Forage Protein Characterization and Utilization For Beef Cattle
Cooperating States: AR, IA, KS, MI, MN, MO, NE, ND, OH, OK, WI

Regional: NC-193 Project: ILLU-65-0348
Principal Investigator: E. Armbrust
Title: Spatial Dynamics of Leafhopper Pests and Their Management On Alfalfa
Cooperating States: IA, IN, KY, MD, MI, MN, MO, NE, NY, OH, OK, PA, WI

Regional: NC-197 Project: ILLU-70-0310
Principal Investigator: E. Hahn
Title: Research In Support Of a National Eradication Program For Pseudorabies
Cooperating States: IA, GA, NE

Regional: NC-205 Project: ILLU-65-0306
Principal Investigator: D. Onstad
Title: Ecology and Management Of European Corn Borer and Other Lepidoptra
Cooperating States: DE, IA, KS, MI, MN, MO, NE, ND, PA, WI, IN, NY, TX, OH
Canada

Regional: NC-213 Project: ILLU-10-0351
Principal Investigator: M. Paulsen
Title: Marketing and Delivery of Quality Cereals and Oilseeds
Cooperating States: ID, IN, IA, KS, MN, MT, NE, OH, TX, WA, WI

Regional: NC-218 Project: ILLU-15-0323
Principal Investigators: R. Hoelt
Title: Characterizing Nitrogen Mineralization and Availability in Crop Systems
To Protect Groundwater Resources
Cooperating States: IN, IA, KS, MI, MN, NE, OH, SD, WI

Regional: NE-112 Project: ILLU-70-0354
Principal Investigator: D. Morin
Title: Mastitis Resistance To Enhance Dairy Food Safety
Cooperating States: CA, CT, IA, KY, LA, MD, NY, OH, PA, TN, VA, VT, WA

Regional: NE-124 Project: ILLU-65-0330
Principal Investigator: J. Juvik
Title: Genetics Manipulation Of Sweet Corn Quality and Stress Resistance
Cooperating States: FL, HI, IA, IN, MN, NY, PA, OR, WI, Guam

Regional: NE-127 Project: ILLU-35-0383
Principal Investigator: P. Harrison
Title: Biophysical Models For Poultry Production Systems
Cooperating States: AR, CT, IA, MD, MN, NE, PA, TX, WI

Regional: NE-132 Project: ILLU-35-0309
Principal Investigator: M. Murphy
Title: Environmental and Economic Impacts Of Nutrient Flows In Dairy Forage Systems
Cooperating States: IN, MD, MA, MI, NJ, NY, PA, UT, WA, WI, WV

Regional: NE-165 Project: ILLU-05-0341
Principal Investigator: L. Unnevehr
Title: Private Strategies, Public Policies and Food System Performance
Cooperating States: AR, CA, CT, GA, IN, IA, KS, LA, MA, MD, MI, MN, NE, NH,
NJ, NY, NC, OH, RI, TX, OR, VA, WI, Canada

Regional: NE-167 Project: ILLU-05-0348
Principal Investigator: H. Hunt
Title: Family Business: Interaction In Work and Family Spheres
Cooperating States: HI, IN, IA, MN, MT, NE, NY, ND, OH, PA, TX, UT, VT, WI

Regional: NRSP-3 Project: ILLU-65-0304
Principal Investigator: G. Rolfe
Title: The National Atmospheric Deposition Program
Cooperating States: CA, CO, GA, IN, IA, KS, MI, MN, NE, NH, OH, PA, UT, VA

Regional: NRSP-5 Project: ILLU-65-0305
Principal Investigator: S. Korban
Title: Develop and Distribute Deciduous Fruit Tree Clones Free Of Graft-Transmissible
Pathogens
Cooperating States: NY, MD, MI, IA, VA, AR, OK, CA, WA, Canada

Regional: S-260 Project: ILLU-65-0335
Principal Investigator: R. Novak
Title: Biology, Ecology, and Management of Riceland Mosquito Populations
Cooperating States: AR, LA, TX, MS, CA

Regional: S-265 Project: ILLU-65-0309
Principal Investigator: L. Solter
Title: Development and Integration Of Entomopathogens Into Pest Management Systems
Cooperating States: AL, AR, CA, CO, FL, GA, ID, KY, LA, ME, MD, MS, MN, NJ,
NY, NC, OH, SC, TN, WA, MI, IA, SD, MA, AZ, Puerto Rico

Regional: S-274 Project: ILLU-70-0311
Principal Investigator: C. Jones
Title: Integrated Management of Arthropod Pests Of Livestock and Poultry
Cooperating States: AL, AR, FL, GA, IA, IN, KS, LA, MN, MO, NE, NH, NM, ND,
NY, OK, PA, TN, TX, WY, Canada

Regional: S-275 Project: ILLU-10-0324
Principal Investigator: T. Funk
Title: Animal Manure And Waste Utilization, Treatment, and Nuisance Avoidance
For Sustainable Agriculture
Cooperating States: AL, CA, FL, GA, HI, IN, IA, KY, LA, MN, NC, OR, SC, TN,
TX, VA, WI

Regional: S-278 Project: ILLU-05-0340

Principal Investigator: L. Unnevehr

Title: Food Demand, Nutrition and Consumer Behavior

Cooperating States: CA, FL, GA, IA, KS, LA, ME, MN, NJ, NY, NC, OH, OR, SC,
TN, TX, VA, WA, WV, WI, IN

Regional: S-281 Project: ILLU-65-0307

Principal Investigator: C. Helm

Title: Dynamic Soybean Insect Management For Emerging Agricultural Technologies
and Variable Environments

Cooperating States: AR, FL, GA, IN, IA, KY, LA, MS, NE, OH, SC, TN, TX, VA

Regional: W-082 Project: ILLU-10-0304

Principal Investigator: R. Cooke

Title: Pesticides and Other Toxic Organics In Soil and Their Potential For Groundwater

Cooperating States: AR, AZ, CA, CO, FL, HI, IN, KS, MN, NM, NY, WA

Regional: W-171 Project: ILLU-35-0380

Principal Investigator: M. Wheeler

Title: Germ Cell and Embryo Development and Manipulation For the Improvement of
Livestock

Cooperating States: AR, CA, CO, IA, LA, OR, UT, WA

Regional: W-180 Project: ILLU-65-0302

Principal Investigator: G. Robinson

Title: Identification, Behavioral Ecology, Genetics and Management Of African Honey
Bees

Cooperating States: AL, AZ, CA, FL, OR, TX, VA, WA, ID, NV, UT

Regional: W-181 Project: ILLU-35-0359

Principal Investigator: J. Drackley

Title: Modifying Milk Fat Composition For Improved Manufacturing Qualities and
Consumer Acceptability

Cooperating States: CA, OH, SD, UT, VA, WA, WI, NY, SC

Regional: W-188 Project: ILLU-65-0329

Principal Investigator: T. Ellsworth

Title: Improved Characterization and Quantification of Flow and Transport Process In
Soils

Cooperating States: IN, WA, CA, CO, NM, IA, ID, DE, KS, ND, AK, UT, DC, NV,
AZ, MT, WY

Appendix D
UNIVERSITY OF ILLINOIS PLAN OF WORK
MULTI – STATE RESEARCH PROJECTS

Ag Outlook Guide – Darrell Good of ACE working with Purdue, Ohio State and University of Kentucky in the collaborative effort to produce the Ag Outlook Guide. FY 97 S-L funds \$5,110.

ACE Regional Meetings – developed by ACE. Regional meetings with Purdue focusing on traditional outlook, marketing and productions issues. \$15,000/year S-L funds.

Midwest Plan Service – \$30,000/year S-L funds. “The MWPS committee is an excellent long-standing example of multi-state, multi-disciplinary cooperation. Continuation depends on strong backing by its member land-grant colleges” (twelve NC Universities listed). The MWPS projects include revision Conservation Tillage Handbook, complete rewrite of the House Planning Handbook, multi-state curriculum for teaching producers best management practices for livestock manure management, new livestock confinement ventilation handbooks, revised Livestock Waste Facilities Handbook, new Irrigation Systems Handbook.

Sea Grant – support of NC director, \$24,952 S-L, \$24,952 Hatch, \$24,952 State. Also support of aquaculture specialist, \$27,645 S-L funds. This would fit as an integrated research and extension activity.

NCR Educational Materials Project – NC Region IDEA (Information Development for Extension Audiences) Agreement with Iowa State on file in the CES Director’s Office. \$7,102/year S-L funds.

National Pork Industry Handbook – collaboration by ITCS and Animal Sciences with Purdue. \$3,347/year paid on CES Director’s Trust account but could be on S-L funds to meet multistate 3(b), 3(c) requirements.

NCRCRD – Illinois’ share of assessment for North Central Regional Center for Rural Development, \$2,684/year S-L funds paid to Iowa State.