

UNIVERSITY OF MINNESOTA

Sent 7/22/99 slw

Twin Cities Campus

Office of the Director
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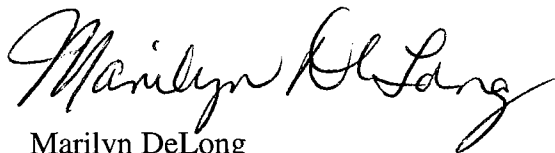
Dr. George Cooper,
Deputy Administrator
Partnerships
Cooperative State Research, Education, and Extension Service
U.S. Department of Agriculture
Washington, D.C. 20250

Dear Dr. Cooper:

Enclosed is the University of Minnesota AREERA Plan of Work document that you requested. It includes a plan and programs for each of the five national goals.

Please contact Dr. Phil Larsen if you have questions.

Sincerely,



Marilyn DeLong
MAES Deputy Director

University of Minnesota
Implementation of Plan of Work for Research
in the Agricultural Experiment Station
Federal Fiscal Years 2000-2004

A. Background

The Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA) requires that each Agricultural Experiment Station (AES) develop a Plan of Work (POW), in addition to the system of Hatch and regional projects.

The University of Minnesota Agricultural Experiment Station (MAES) is comprised of research contributions from five colleges as follows: College of Agricultural, Food, and Environmental Sciences (COAFES), College of Natural Resources (CNR), College of Human Ecology (CHE), College of Veterinary Medicine (CVM), and College of Biological Sciences (CBS). Research funding is distributed among these five colleges based upon their research activity. Management of research is decentralized to each collegiate Dean who also serves as Associate or Assistant Director of the Agricultural Experiment Station. The Dean of COAFES serves as Director of the AES, the Deans of CNR and CHE have the title of Associate Directors of MAES, and the Deans of CVM and CBS have the title of Assistant Directors.

The contact for the Minnesota Agricultural Experiment Station is the Director:

Dr. Phil Larsen, Interim Director
University of Minnesota Agricultural Experiment Station
190 Coffey Hall
1420 Eckles Avenue
St Paul, MN 55108

B. Operating Philosophy

The shared missions of the Agricultural Experiment Station and the University of Minnesota Extension Service include serving the people of our state based upon three parameters: economic viability; environmental sustainability; and quality of life. We are committed to serve all sectors of the population and to that end view diversity in ideas and people as a strength. We believe the roles of participants within our programs should be structured to promote collaborations and an arena for change.

Five pervasive values for our projects and programs in each of the five goals of GPRA include:

1. to integrate research, education and outreach efforts in a comprehensive program;
2. to engage in research and educational practices that do not deplete our nonrenewable resources nor negate quality of life;
3. to derive synergy from multidisciplinary research and collaborative learning partnerships;
4. to support and encourage experiential knowledge and the co-learning role of citizens;
5. to encourage diversity of ideas and people within a learning environment.

Stakeholder Input:

Continuous stakeholder input is sought from key constituents and stakeholders appropriate to each research goal. These include groups such as the following: peers, advisory councils, commodity groups, racial and ethnic minorities, i.e. citizens within tribal colleges. Input from such groups is sought yearly and research and outreach programs are planned based upon their responses. In addition, a system of Regional Partners is being developed throughout Minnesota to address and engage in research critical to their region (3 were developed in 1999 and additional regional partners will be formed as funding from the State Legislature is secured). (See Appendix 1 for operating principles for Regional Partnerships.)

In addition every three years, stakeholder input for the research program as a whole will be sought. The Directors and Associate Directors of AES (representing all 5 colleges listed above) plan to visit six regions within the state of Minnesota to present and receive feedback for their research programs to all who wish to attend. Publicity will include media announcements (radio, e-mail, and posters in designated public spaces such as local libraries, and Research and Outreach Centers located within each region).

Equal Opportunity

We adopt by reference the University of Minnesota's Affirmative Action Program for procedures for reporting Civil Rights compliance and Equal Employment Opportunity requirements (See Appendix 2) .

Funding Resources

Funding resources include federal funding (Hatch) and state contributions to research at the approximate ratio of 1:9 . Thus the state contributes far more than the match required to receive federal funding. In addition, special state research initiatives address critical issues such as wheat scab, avian respiratory disease, rural economic viability. The Rapid Response fund is a source of funding from a recent state legislative initiative set up to address ongoing and evolving critical issues in Minnesota. To receive funding from Rapid Response involves a competitive process of proposal submission and review. (See Appendix 3 for guidelines for proposals for Rapid Response).

Other funding comes from commodity check-offs in such agricultural products as canola, wild rice, barley, milk and beef. Considerable funding for research derives from federal funding agencies i.e., NSF, NIH as well as national and local industry, i.e., Cargill. For example, NSF funding helps to support state-of-the-art instrumentation in the Mass Spectrometry Center.

Scientific Merit and Peer Review Process

Minnesota engages in a scientific merit and peer review process for all projects. Peer review involves both reviewers internal and external to the University (See Appendix 3 for review process for the Rapid Response fund and Appendix 4 for reviewer form for AES projects).

At the University of Minnesota each College engages in a strategic planning process on a yearly basis. The result is a "Compact" for each College that serves as a basis for strategic planning and negotiations with central administration. (See Appendix 5 for examples of Compacts for Colleges with AES funding).

Identification of multi-state, multi-disciplinary research programs.

Minnesota engages in multi-state projects through the regional research programs as well as an extensive program with adjacent states (See Appendix 6). An important criterion for Minnesota to engage in multi-state research is that projects be multi-disciplinary as well. The University of Minnesota also engages in multi-state research with adjacent states. For example the University of Minnesota has joint projects and faculty appointments with North Dakota State University that involve collaborating on sugarbeet management and production, potatoes management and production, and cropping systems, with the University of

Wisconsin, Madison on dairy research, with Iowa State University on use of wetlands, with VPI on avian research.

Identification of research integrated with extension outreach programs:

Appendix 7 indicates the extensive listing of University of Minnesota faculty with joint appointments including both research and outreach components. This listing exceeds the federal requirement for integration and will serve to provide evidence of the integrative efforts for federal funding at the University of Minnesota.

In addition to meeting funding requirements there are many other evidences of programs initiating research and carrying through to dissemination through outreach. MN IMPACTS is a joint research and outreach database for reporting research and outreach impacts within the state of Minnesota (See Appendix 8 for an example of a research accountability report from an AES project. Access the web site for additional examples at www3.extension.umn.edu/mn_impacts).

C. Plan of Work

The Minnesota POW is organized around the five national REE goals and the following information is reported under each goal for each program:

- Statement of Issues
- Performance Goals: Output and Outcome Indicators
- Key Program Components
- Internal and External Linkages
- Target Audiences
- Program Duration

Allocation of resources

Appendix 9 includes the allocation of funding resources for each Goal and specific Hatch projects within each College.

Goal 1: Through research and education, empower the agricultural system with knowledge that will improve competitiveness in domestic production, processing, and marketing. (An agricultural system that is highly competitive in the global economy.)

Goal 1-Program 1: Agricultural Production and Farm Business Management

Statement of Issue:

The 1996 Farm Act quickly and dramatically changed the decision-making environment for farmland operators, owners, and managers. The emergence of the Farm Act with its production flexibility contract payments (PFCPs) and its almost complete elimination of planting restrictions jolted many engaged in agriculture. Some of the primary issues Minnesota agricultural producers will need to address as a result of the changes in the agricultural industry and policy include: strategic positioning, transferring management capabilities, frequent performance monitoring, evaluating information technologies, marketing options, monitoring external factors, managing information, and accountability.

The Center for Farm Financial Management within the College of Agricultural, Food and Environmental Sciences was established to conduct research and develop educational tools for farmers, agricultural lenders and educators to apply the principles and concepts of farm planning, financing and analysis in a practical manner. These educational tools are usually in the form of computer software that we develop and support to help improve the decision-making ability of farmers. To remain competitive in agriculture, Minnesota producers and agriculture businesses must be better able to develop sound production and business management plans, and access educational and informational technologies.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Conduct research to support improved decision making and risk management in farm planning and financing for farmers and lenders.
- Conduct research to support improved decision making in financing for agricultural business owners.

Internal and External Linkages:

- Internal collaborations to accomplish program and objectives

-Agronomic and animal related departments, and technical communications in the College of Agricultural, Food, and Environmental Sciences (COAFES)

-USDA/ARS

-University of Minnesota Extension Service

• **External Collaborations:**

-Farm Lenders

-Farm Credit Institutions

-Farm Service Agency

Target Audiences:

-Farmers and ranchers

-Extension educators

-University/Technical college educators

-Agricultural lenders

-Veterinarians

-Other public agencies

-Private businesses and consultants

Program Duration:

Five years

Goal 1-Program 2: Agricultural Marketing and Distribution

Statement of Issue:

The livestock industry is a high value economic enterprise in Minnesota's agricultural economy. Improvements in economic efficiency affect many people involved in production, distribution and marketing of livestock and meat products -- impacts are likely to be long-term in nature (10-20 years). The greatest economic value is likely derived from the price risk management. Improved price risk management can result in substantially improved profitability in any given year.

The production and distribution of food and fiber in Minnesota have changed dramatically during the last decade. Food in the supermarket and restaurant is as likely to come from another state or continent as it is from Minnesota, thereby creating a disconnect between producer and consumer.

Output/Outcome Indicators:

-CRIS Reports

-MN IMPACTS

- Number of refereed journal articles and other peer review publications

- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Conduct research to support improved decision making in farm planning and financing for farmers and lenders.

- Conduct research to support improved decision making in financing for agricultural business owners.

Internal and External Linkages:

- **Internal collaborations to accomplish program and objectives:**

- Agronomic and animal related departments in the College of Agricultural, Food, and Environmental Sciences (COAFES); Veterinary Medicine

- USDA/ARS

- University of Minnesota Extension Service

- **External Collaborations:**

- Farm Lenders

- Farm Credit Institutions

- Farm Service Agency

Target Audiences:

- Farmers and ranchers

- Extension educators

- University/Technical college educators

- Agricultural lenders

- Veterinarians

- Other public agencies

- Private businesses and consultants

Program Duration:

- Five years

Goal 1-Program 3: International Economic Competitiveness

Statement of Issue:

Minnesota agriculture has become much more affected by global conditions. Economic decline in Southeast Asia affects the ability to market

commodities in that part of the world. Growing conditions in Brazil and Canada affect the price of Minnesota products. And, trade agreements affect what can be bought and sold in countries around the world.

The Center for International Food and Agricultural Policy in the College of Agricultural, Food, and Environmental Sciences was established to analyze the forces that underlie international trade restrictions; describe the dynamic interdependence of farmers' production and investment decisions and governments' agricultural and trade policy decisions; and look at the economic effects of policy decisions in other countries on agriculture in Minnesota and the U.S. With its interdisciplinary approach, the center uses its research and education activities to increase international understanding about food, agriculture, nutrition, natural and human resources, and the environment, and to positively impact the policies of both developed and developing countries

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Conduct research on the economic interrelationships in both the domestic and foreign food and agricultural industries.
- Develop and maintain an analytical support system that facilitates research and analysis on food, agricultural and trade policy issues.
- Evaluate supply, demand and policy factors in the United States and abroad that influence both short-term and long-term trade prospects and patterns.
- Provide information to help public policy participants and decision-makers evaluate trade and policy issues and increase public understanding of these issues.
- Provide access to information technologies and training materials and continue research on the use of educational technologies.

Internal and External Linkages:

- **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Food Science and Nutrition; Applied Economics; Rhetoric; Soil, Water, and Climate, (COAFES)
- Hubert H. Humphrey Institute of Public Affairs (UM)
- Economics Department (UM)
- College of Natural Resources (UM)
- Law School (UM)
- Carlson School of Management (UM)
- Political Science department
- University of Minnesota Extension Service.

• **External Collaborations:**

- 30 international affiliates in countries such as Poland, Germany, Italy, and Argentina

Target Audiences:

- State legislatures
- Farmers
- Extension educators
- University/Technical college educators
- Agricultural lenders
- Private businesses and consultants

Program Duration:

Five years

Goal 1-Program 4: Physiological Processes Impacting Production and Quality Traits in Agricultural Animals

Statement of Issue:

Increasing the profitability of producing food from animals is a primary concern for Minnesota livestock producers. Research is needed to increase the understanding of the physiologic mechanisms affecting reproduction, growth and performance. These understandings will be vital for production efficiency and promotion of a healthy and competitive livestock industry in Minnesota. Reproduction is of major economic importance to producers of ruminant animals because it greatly impacts overall production efficiency. A better understanding of their reproductive and growth mechanisms will give rise to strategies and technologies to enhance production

For Minnesota animal producers industries to remain viable, it is necessary to produce animals which provide consumers with the quality meat, milk

and poultry products they desire at an affordable cost. High production efficiency and lean growth will be in greater demand for expanding national and international markets, along with being environmentally responsible.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Improve production profitability through reproductive strategies and research.
- Increase research on lean growth and alternative animal products for consumer driven markets.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Animal Science; Food Science and Nutrition; Applied Economics; Agronomy and Plant Genetics
- Center for Alternative Plant and Animal Products (COAFES)
- USDA/ARS
- College of Veterinary Medicine
- University of Minnesota Extension Service

• **External Collaborations:**

- MN Cattleman's Association
- MN Turkey Growers Association
- National Turkey Federation
- MN Pork Producers
- National Pork Producers Association
- U.S. and MN Feed Industry
- Minnesota Milk Producer's Association

Target Audiences:

- Farmers
- Extension educators

- University/Technical college educators
- MN feed industry
- Veterinarians
- Private businesses and consultants

Program Duration:

Five years

Goal 1-Program 5: Animal Production and Management Strategies

Statement of Issue:

Minnesota livestock producers are challenged with integrating knowledge from diverse disciplines into production practices suitable for their individual operation. Research on animal production systems must address the interactions among nutrition, genetics, reproduction, physiology, microbiology, immunology, and molecular biology, and also related effects on animal health, farm management, productivity, and impacts to the environment.

In Minnesota, large amounts of land (including two million acres of conservation reserve land) are suited for beef cow/calf, sheep and dairy operations, but the cost of production is high due to feed costs and inefficient use of available forage. Research is needed to develop grazing and forage systems to reduce feed costs and improve profitability.

Research leading to applications in production efficiency, sustainability, animal and environmental well-being, and high quality products are imperative if Minnesota animal agriculture is to remain economically viable.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Nutrition and management factors affecting the biologic and economic efficiency of animal production systems.
- Evaluation of alternative feeds and feeding and management strategies to improve economic efficiency.
- Determination of nutrient requirements to enhance economic and environmentally sustainable animal production.
- Improved definition of dietary nutrient needs for food animals.
- Provide information on improved sources of nutrients.
- Production systems research to optimize system parameters that result in sound environmental and profitable production strategies.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Animal Science; Food Science and Nutrition; Applied Economics; Soil, Water, and Climate; Biosystems & Agricultural Engineering; Agronomy and Plant Genetics (COAFES)
- Center for Alternative Plant and Animal Products (COAFES)
- MN Institute for Sustainable Agriculture
- USDA/ARS
- College of Veterinary Medicine
- University of Minnesota Extension Service.

• **External Collaborations:**

- MN Cattleman's Association
- MN Turkey Growers Association
- Nation Turkey Federation
- MN Pork Producers
- MN Soybean Growers Association
- National Pork Producers Association
- U.S. and MN Feed Industry
- MN Milk Producers Association

Target Audiences:

- Farmers
- Extension educators
- University/Technical college educators
- MN feed industry
- Other public agencies
- Private businesses and consultants

Program Duration:

Five years

Goal 1-Program 6: Genetic enhancements in animal systems

Statement of Issue:

Minnesota meat producers currently face the challenge of minimizing their production costs while supplying leaner, more visually appealing meats to various consumer markets. Research is currently being conducted to identify genetic differences in animals which impact economically important traits, detection of genes involved in disease resistance, or inherited diseases related to that industry. The results of this research would assist producers in their efforts to accelerate the genetic improvement of meat-bearing animals.

Meat producers are interested in increasing their competitiveness by offering leaner, juicier meats. With new genetic technology, the end-product quality improves in relation to costs involved with raising the animals, as producers realize an average daily gain of weight with better feed efficiency. Previous research has indicated as much as a 25% increase in this efficiency.

Additionally, the use of genetic maps and markers will result in products that maintain a generally higher visual appeal to the consumer. For producers and packers, this is where much of the end value comes from, so they can cater towards different global markets, according to specific consumer preferences. While the overall economic impact is still difficult to determine, our goal is to make Minnesota producers more competitive. If we can transfer technology effectively to producers, it will naturally have an improved job effect on both family businesses and corporations. As such, producers will be able to get contracts with packing plants that guarantee higher prices based on quality. While this process does not directly affect consumer prices, the packers will eventually be able to offer better prices as quality becomes more consistent.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Identify major animal genes that affect growth and development, reproductive performances, lactation, and disease resistance or susceptibility characteristics.
- Identify genetic differences in animals that impact economically important traits or inherited diseases.
- Identify biotechnology that would assist producers in their efforts to accelerate the genetic improvement of meat-bearing animals.
- Construct linkage maps of the animal genomes (total nuclear DNA) through the application of highly informative markers called micro-satellites. By analyzing the segregation patterns of these markers in various reference families and clinical cases, we will help define those areas of the genome where genetic differences affect observable traits and diseases. Markers of specific regions, which have a major impact on economic traits or genetic diseases, can then be incorporated into marker-assisted selective breeding programs.

Internal and External Linkages:

• Internal collaborations:

- Researchers and extension faculty in the departments of Animal Science; and Food Science and Nutrition (COAFES)
- University of Minnesota Extension Service
- USDA-ARS
- College of Veterinary Medicine.

• External Collaborations:

- MN Cattleman's Association
- MN Turkey Growers Association
- National Turkey Federation
- MN Pork Producers
- National Pork Producers Association
- U.S. and MN Feed Industry
- MN Milk Producers Association

Target Audiences:

- Livestock producers
- Veterinarians
- Consumers
- Researchers

Program Duration:

Five years

Goal 1-Program 7: Understanding physiological processes impacting production and quality traits in cropping systems

Statement of Issue:

Increasing efficiencies of producing crop plants is a primary concern for Minnesota producers. Research is needed to increase the understanding of component biological responses that determine crop yield and quality parameters at a range of levels from the biochemical to the physiological. Emphasis will need to be placed on the bases of adaptability to stresses caused by high temperature, adaptability of a range of current and alternative crops, water storage, malnutrition and competition from weeds, pests and diseases. The intention is to learn how to manipulate these responses through genetic and agronomic means.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Program Components:

- Increase knowledge of biological components of crop yield.
- Adaptability of crop plants to environmental stresses.
- Understanding of the role of genetics in production and quality traits.

Internal and External Linkages:

- **Internal collaborations to accomplish program and objectives:**
 - Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Horticultural Science; Entomology; Plant Biology; and Plant Pathology; Biosystems & Agricultural Engineering (COAFES).
 - University of Minnesota Extension Service
 - Center for Alternative Plant and Animal Products (COAFES)
 - USDA/ARS
 - Minnesota Institute for Sustainable Agriculture

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Wheat and Barley Growers
- MN Soybean Growers Association
- MN Corn Growers Association
- MN Wild Rice Growers Association
- MN Valley Alfalfa Producers
- MN Potato Growers Association;
- Midwest Food Processors Association

Target Audiences:

- Producers
- Extension Educators
- Crop consultants
- Seed industry

Program Duration:

Five years

Goal 1-Program 8: Genetic enhancement in plant production systems

Statement of Issue:

Germplasm is the key element of successful plant breeding programs. Germplasm development involves research to improve the yield, adaptability, disease resistance, resistance to environmental stress, and product quality. Evaluation, development, and enhancement require long-term commitments to develop superior germplasm sources.

New sources of genetic variation to improve the germplasm resource base of Minnesota's agricultural crops and new information on the inheritance of commercially important traits is essential. Research in the program is linked directly to conventional breeding programs undertaken by the Minnesota Agricultural Experiment Station.

More effective procedures for manipulating germplasm via marker-assisted selection, elucidating genetic bases of traits with complex inheritances, identifying and characterizing novel heterotic groups and quantitative trait loci, identifying optimal germplasm for specific breeding programs, and applying knowledge in production between breeding and

programs will be needed to insure genetic diversity of Minnesota's plant production systems.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Components:

- Germplasm development, genetic transformation and the development and application of molecular markers.
- Crop improvement for the introduction of new genes to increase resistance to pests and diseases; and improve both productivity and crop quality.
- Development of new technologies to develop more rapid and efficient methods of identifying useful properties of genes and for manipulating genetic material.
- Develop new approaches in the characterization and classification of genetic material and in the application of new biotechnologies will support the development of new crops.
- Development of new approaches for breeding and genetic improvement utilizing molecular technologies.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Horticultural Science; Entomology; Plant Biology; and Plant Pathology.
- University of Minnesota Extension Service
- Center of Alternative Plant and Animal Products (COAFES)
- USDA/ARS

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Wheat and Barley Growers
- MN Soybean Growers Association, Forage, Turf Organizations
- MN Corn Growers Association
- MN River Valley Potato Growers; Area II Potato Growers

- MN Wild Rice Growers Association
- MCIA

Target Audiences:

- Producers
- Extension Educators
- Crop consultants
- Seed industry

Program Duration:

Five years

Goal 1-Program 9: Crop Production and Management Strategies

Statement of Issue:

Production capacity, production efficiency, and crop protection are major factors supporting Minnesota crop productivity. Minnesota agriculture is relatively diverse with production in corn, soybean, spring wheat, barley, alfalfa, sugarbeets, and sunflower ranking in the top 4 nationally.

Minnesota producers are seeking ways to minimize their inputs in the areas of pesticides and fertilizers with the adoption of new crop technologies, diversifying their crops, minimizing soil erosion with less tillage operations, and taking advantage of new alternative crop markets.

New technologies, including plant transformation, genomics, and computer assisted biology will help provide the necessary tools needed understand and later modify plants for improved production characteristics.

Production of high quality food is an important industry in Minnesota, and sustaining this high level of production and quality is imperative. However, to remain viable in an increasingly global and competitive agriculture market, Minnesota producers must have access to novel approaches that reduce production risks while protecting the natural resource base of the state.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Components:

- Farming systems that maximize profitability while protecting the natural resource base.
- Research to identify and overcome constraints to crop production.
- Research focuses on soil health, tillage systems, crop rotations, pest management, and decision support systems that will accelerate the adoption of research results on farms by demonstrating the benefits of research in terms of the whole farm.
- Development and subsequent transfer to customers of efficient crop production and sustainable cropping systems. Overall challenges are to substantially increase the knowledge base of, and sustainable technology for crop production and cropping systems; to improve the delivery of technologies generated; and to promote the use of these systems.

Internal and External Linkages:

- **Internal collaborations to accomplish program and objectives:**
 - Research and extension faculty in the Departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Horticultural Science; Entomology; Plant Biology; Plant Pathology; Biosystems & Agricultural Engineering.
 - University of Minnesota Extension Service
 - Center for Alternative Plant and Animal Products (COAFES)
 - USDA/ARS
 - MN Institute for Sustainable Agriculture
- **External Collaborations:**
 - Minnesota Department of Agriculture
 - MN Wheat and Barley Growers
 - MN Soybean Growers Association; MN Canola Growers
 - MN Corn Growers Association; Turf, Forage Growers
 - MN Wild Rice Growers Association
 - MN Potato Growers Association

Target Audiences:

- Producers
- Extension Educators
- Crop consultants

Program Duration:

Five years

Goal 1-Program 10: Value Added Agriculture

Statement of issue:

Minnesota agriculture faces increasing, intense competition in the global marketplace. Worldwide, agricultural production has increased faster than demand in many areas, resulting in current commodity surpluses, low prices, and unreliable profitability. Recent shifts in U.S. farm policy to remove price supports emphasize the need for Minnesota producers to move beyond production of ever-larger quantities of ever-cheaper commodities. Producers must be able and willing to produce higher-quality products that can be differentiated from lower-value commodities; commodities and co-products must be converted into useful value-added food and nonfood products; and products must be protected from contamination or loss of quality after harvest to ensure marketability. These applications could include traditional uses such as foods and feeds, or nontraditional applications in nonfood products such as adhesives, plastics, composite products, fuels, and lubricants. Other uses could include nutraceuticals, pharmaceuticals, biopesticides, or other high-value uses.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Components:

- Research to develop knowledge and technology for crop and animal product quality measurement and maintenance or enhancement during processing and marketing.
- Commodity and co-product processing into value-added materials; and new specialty products from crops and animals.
- Research to identify the role of product composition, molecular structure, and physical state in determining end-use quality.
- Applied research will develop new processes to maintain or enhance product quality during harvest, storage, transport, and marketing.
- Innovative processes for the extraction and purification, or manufacture, superior products from agricultural commodities.

- Application of these innovative technologies will expand the range and value of agricultural products and reduce the cost of their production.
- Identify alternate sources and create technology leading to an expanded, diverse range of value-added food and nonfood products from commodities and undervalued byproducts of agriculture.
- Development of high-value, "designer" crops

Internal and External Linkages:

- **Internal collaborations to accomplish program and objectives:**
 - Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Horticulture; Entomology; Plant Biology; Plant Pathology; Biosystems and Agricultural Engineering; Animal Science; and Food Science and Nutrition. University of Minnesota Extension Service
 - Center for Alternative Plant and Animal Products (COAFES)
 - USDA/ARS
 - MN Institute for Sustainable Agriculture

- **External Collaborations:**
 - Minnesota Department of Agriculture
 - MN Wheat and Barley Growers
 - MN Soybean Growers Association
 - MN Corn Growers Association
 - MN Wild Rice Growers Association
 - MN Pork Producers
 - MN Beef Producers
 - MN Turkey Growers Association
 - MN Milk Producers Association

Target Audiences:

- Producers
- Extension Educators
- Crop consultants

Program Duration:

Five years

Goal 1-Program 11: Green Industry

Statement of Issue:

The green industry is one of the fastest growing segments of Minnesota agriculture economy. The Green Industry is defined as firms involved in the production, design, installation, maintenance and sale of seed and plant products to enhance human environments, i.e. sports fields, parks, golf courses, home lawns. As such, the industry consists of three major components: landscape services, nursery/greenhouse production and distribution, and florists. Within landscape services, there are three basic activities: design, installation and maintenance. Within the nursery sector, there are also three basic activities: production of plant materials, wholesale distribution and retail distribution of nursery products. Production of plant materials includes field production, specialized rose and sod farms, and container and greenhouse production of plants. In the industry, production and wholesaling often go hand in hand.

The Green Industry's growth is closely tied to increases in population and subsequent increases in construction. Consequently, the Industry grew at a phenomenal rate during the 1970's and 1980's. Corporate outsourcing of landscape services also fueled part of the growth in the 1980's. Between 1974 and 1987, the industry increased fourfold in employment and eightfold in nominal payroll. Between 1987 and 1994, employment in the industry increased by 30% and payroll increased by 22%.

Research is needed to develop new technologies and strategies that increase profitability while minimizing the environmental impact from urban agriculture. The aesthetic, functional and economic impact of ornamental plants in our working and living environment has a profound positive impact on the quality of life.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Components

- Development of nursery products which will enhance the ethical and economic progress of the industry.
- Improve nursery products and techniques.
- Research is needed to develop new technologies and strategies that increase profitability while minimizing the environmental impact from urban agriculture.

production is relatively diverse with production in sweet corn, processing peas, apples and potatoes, that rank among the top nationally.

To remain competitive in our rapidly changing global economy, these commercial food crop producers must adopt new cultivars/rootstocks that are more tolerant to environmental stresses affecting plants, cultural systems that improve production efficiency and promote sustainability, and post harvest handling practices that improve crop utilization and product safety. Before new cultivars, production systems, or post harvest practices can be recommended, they must be thoroughly evaluated under Minnesota environmental conditions.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industry applications of findings

Performance Goals: will vary with research project.

Key Components

- Research assists commercial food crop producers in the adoption of new cultivars/rootstocks that are more tolerant to environmental stresses.
- Research cultural systems that improve production efficiency and promote sustainability.
- Research on post harvest handling practices that improve crop utilization and product safety..

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Horticultural Science; Agronomy and Plant Genetics; Soil, Water, and Climate; Entomology; Plant Biology; Plant Pathology; Biosystems & Agricultural Engineering.
- University of Minnesota Extension Service
- Center for Alternative Plant and Animal Products (COAFES)
- USDA/ARS Fruit Lab
- MN Landscape Arboretum

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Apple Growers Assoc.
- MN Fruit and Vegetable Growers Association
- MN Grape Growers Association
- N. American Strawberry Growers Association
- Midwest Food Processors Association
- Red River Valley Potato Growers Association
- Area II Potato Growers

Target Audiences:

- Producers
- Extension Educators
- Public
- Food processors
- Master gardeners

Program Duration:

Five years

Goal 1-Program 13: Agricultural Information Technology

Statement of Issue:

The information revolution is having profound impacts on agricultural producers and businesses. Changes in information collection, processing, and technology is causing dramatic changes in the structure of agriculture. Everything from precision farming to electronic markets will impact the sector.

The adoption and widespread use of information technology in agriculture is constrained by a number of factors. Producers lack objective information on new technologies, training on how to operate and use the information hardware, software, data systems, and decision tools, and the necessary private infrastructure for efficient operation of systems. The tools of the technical communicator will facilitate the effective use of information so the producers can create, manage, and evaluate their data systems.

Research is needed to provide the critical information to producers and businesses to facilitate their decisions on the effective use of information technology.

Output/Outcome Indicators:

- CRIS Reports

-MN IMPACTS

-Number of refereed journal articles and other peer review publications

-Industry applications of findings

Performance Goals: will vary with research project.

Key Components

-Research on use of information technology for producers and agribusinesses.

-Research on data management and analysis.

-Research on the effective use of information delivery systems to include the network and distance education technologies.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

-Research and extension faculty and graduate students in the departments of Rhetoric; Horticultural Science; Agronomy and Plant Genetics; Soil, Water, and Climate; Entomology; Plant Biology; Plant Pathology; Applied Economics, and Biosystems and Agricultural Engineering.

-University of Minnesota Extension Service

• **External Collaborations:**

-Minnesota Department of Agriculture

-Industrial affiliates

Target Audiences:

-Producers

-Extension Educators

-public

-consultants

Program Duration:

Five years

Goal 2: To ensure an adequate food and fiber supply and food safety through improved science based detection, surveillance, prevention, and education. ((A safe and secure food and fiber system.))

Statement of Issues

Though we have the most plentiful and the safest food supply in the world, Minnesota consumers are anxious about real and/or perceived hazards that affect food safety and quality. Improper food production and processing practices and subsequent handling has recently been implicated in outbreaks of foodborne illness.

Key Program Components

Research issues being addressed in Minnesota include:

- Use existing and develop new methodologies to analyze food demand behavior
- Create the basic knowledge to permit the food industry to develop safe and flavorful food products
- Reduce incidence of pathogens by incorporating natural anti-microbials in ready-to-consume foods
- Controlled release flavoring systems
- Reduce food spoilage by using naturally occurring chemicals from edible plants
- Optimize product quality by evaluating food component interactions
- Increase understanding of the structural characteristics that proteins bring to food products
- Develop a combined theoretical and experimental approach to conventional and microwave heating
- Application of pasteurization and minimum thermal inactivation process in ground beef
- Develop a polymer science approach to study lipid replacement in cereal-based systems

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer reviewed publications
- Industry applications of findings

Performance Goals: will vary with research project.

Internal and External Linkages

• Internal Collaborations

- University of Minnesota faculty; undergraduate and graduate students in Animal Science and Food Science & Nutrition

- Retail Food Industry Center
- Food Marketing Institute

• **External Collaborations**

- Minnesota Dairy Foods Research Center
- North Central Cheese Industries Association
- Dairy Council
- Turkey Growers
- Beef Producers
- Minnesota Association of Meat Processors
- International Meat and Poultry HACCP Alliance
- State Restaurant Associations
- Minnesota Department of Agriculture
- Minnesota Department of Health
- Agriculture Utilization Research Institute
- Food and Drug Administration
- Commodity/trade associations
- Minnesota Pollution Control Agency
- Department of Natural Resources
- Department of Transportation
- National Food Processor's Institute

Target Audiences

- Department of Health
- Food Product Development Industry; Food Processing Industry
- Food Fermentation Industry
- Public
- Professionals such as teachers, veterinarians, managers
- Mass media employees
- Livestock producers

Program Duration

5 years.

Goal 3: Through research and education on nutrition and development of more nutritious foods, enable people to make health promoting choices. (A healthy-well nourished population.)

Statement of Issues

Nutrition and optimal food intake is a fundamental physical building block and important to the well-being of Minnesotans. Research has established the link between adequate nutrition in the early years and adult productivity, between adequate nutrition and risks of disease and

disability, and between nutrition education and nutritional intake. Research in Minnesota focuses upon such issues as food consumption for optimal health, food chemicals in processing and storage, and product characteristics of foods grown in the mid-west. In Minnesota, 16% of the population is estimated to lack adequate food each day!

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer reviewed publications
- Industry applications of findings

Performance Goals: will vary with research

Key Components

Dietary research efforts underway focus on the relationship between vivo lipid oxidation and its protection against heart disease, diabetes, and cancer, on measuring the physiological effects of dietary fiber, investigating foods that help in the treatment for diabetes, the potential of phyto-estrogens as cancer preventatives, developing new sources of dietary antioxidants and fibers, understanding the link between fat, salt and hypertension, and on a variety of dietary influences of colon cancer. Specific research issues are:

- optimal food consumption for health of colon, cardiovascular disease, specifically diet and cancer, diabetes
- physiological effects of various dietary fibers
- sensory factors affecting the acceptability of foods
- loss of food chemicals in processing and storage
- mixing properties of flours grown in various locations in the mid-west and evaluation of bread quality based upon ingredient interactions

Internal and External Linkages

Internal collaborations:

University of Minnesota Extension Service, College of Human Ecology, College of Agricultural, Food and Environmental Sciences (Departments of Food Science and Nutrition, Applied Economics, Horticulture, Biosystems and Agricultural Engineering, Animal Science), School of Public Health, Medical School (Departments of Microbiology, Physiology, Biochemistry and Molecular Biology, Surgery, and Radiology), Veterinary School

External collaborations:

- American Beef Council, American Soybean Association, National Dairy Promotion Council
- Food scientists, food technologists, microbiologists, dairy food industry, mid-western cereal scientists
- American Institute of Nutrition, Minnesota Obesity Center, Minnesota Association of Community Mental Health Programs, Minneapolis Veterans Administration Medical Center, National Center for Occupational Safety and Health, National Farm Medicine Center, Minnesota Department of Health, Minnesota Department of Human Services, Mayo Clinic, Hennepin County Medical Center, local HMO's University of Wisconsin - Extension and Madison campuses

Targeted audiences

- Neutraceutical companies
- Medical industry

Program Duration

5 years

Goal 4. Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air and biotic resources. (An agricultural system which protects natural resources and the environment.)

Goal 4-Program 1: Maintaining Forest and Natural Resources

Statement of Issues

Minnesota has nearly 17 million acres of forests that provide a wide variety of goods and services to residents of the state. The use, management and protection of these resources that range from intensive management for fiber production to wilderness designation are dependent on wise and informed decisions by citizens and the many resource managers who have been asked to ensure the continued sustainability of the state's forests. If such decisions are to further the public's interests, they must be advised by accurate, authoritative scientific and technological information.

Agriculture in Minnesota must be kept strong while also protecting the state's considerable soil and water resources. For example, the Minnesota river has been labeled as one of the top 20 nonpoint source polluted rivers in the U.S with 92 % of the lands within the basin in agricultural land uses.

Solutions are sought to reduce the negative impacts and maintain our natural resources for fishing, recreation and tourism.

Output/Outcome Indicators:

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer reviewed publications
- examine and evaluate current management systems for risk and environmental impact.

Performance Goals: will vary with research project.

Key Program Components

Research in natural resources sponsored by the Agricultural Experiment Station is carried out via three departments in the College of Natural Resources: Forest Resources, Wood and Paper Science and Fisheries and Wildlife. Other departments addressing forest resource questions include entomology, plant pathology, horticulture, plant biology and applied economics.

Specific research issues in Minnesota are as follows:

- improve understanding of controls on forest composition, diversity and function;
- improve understanding of northern MN forest ecosystems and develop improved management techniques;
- investigate the biology and control of forest microbes and determine their importance to forest health and sustainable ecosystem functioning
- better understand the decisions that affect the integrity and biological diversity of the ecosystem, and linkages between biosphere, microclimate and global climate.
- minimize undesirable human/wild animal interactions and impacts
- develop tools for assessing the fish communities of lakes to manage growth and reproduction rates of species and environmental factors for setting harvest regulations.

Internal and External Linkages

- **Internal collaborations to accomplish program and objectives:**
 - campus faculty in five colleges, support services and county extension educators; Bell Museum of Natural History; Research and Outreach Centers, MN Institute for Sustainable Agriculture

- graduate and undergraduate students through education and student organizations

- **External collaborators:**

- Departments of Agriculture, Health, Natural Resources
- USDA: Farm Services Agency; Natural Resources Conservation Service; Animal, Plant, Health Inspection Service
- USDI: Fish and Wildlife Service, MN Valley National Wildlife Refuge
- Board of Water and Soil Resources
- MN pollution control agency, EPA, U.S. Army Corps of Engineers, Department of Transportation;
- Forest Service, Canadian and U.S. pulp and paper industries, Plant Molecular Genetics Institute, Monsanto Co., Cargill, 3M
- National Park Service, Bureau of Land Management
- MN Waterfowl Association, Wildlife Society, Animal Rights Coalition; City Nature Centers, and county Wildlife Section,
- Associations of National Rifle, Archery

Target Audiences

Primary audiences include Minnesota farmers and the businesses that serve them, those interested in agriculture and impacts on environment, policy makers, e.g. rural communities, sports anglers and fisheries managers, resource agencies, ecologists, Sustainable Farming Association Chapters.

Program Duration

5 years

Goal 4-Program 2: Integrated Pest Management

Statement of Issue:

Pest control represents approximately 34 percent of a farmer's variable crop production costs and pests continue to cause losses of 10 to 30 percent using current pest control strategies. In addition to existing pests, new pests such as wheat and barley head blight and new races of potato late blight continually challenge Minnesota producers. These and other pests not only reduce profitability but also often threaten export markets.

Pesticides are an important tool used by farmers to control pests. However, environmental regulations, pest resistance to pesticides and consumer concerns have reduced the use and availability of pesticides and dramatically limited the introduction of new pest control chemicals.

Integrated pest management is a science-based strategy that provides answers to important pest control problems by identifying and introducing new pest control tools for farmers, with an emphasis on biologically-based IPM products and ecological principles.

On-going and additional research is needed to provide producers with chemical pesticides, biological control products or cultural tactics to replace agricultural chemicals which are under regulatory consideration, providing alternatives where pest resistance limits IPM options, and to provide biologically-based and other sustainable strategies for management of existing and new pests in cropping systems.

Output / Outcome Indicators

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- Industrial applications of findings

Performance Goals: will vary with research

Key Program Components:

- Increase Minnesota producer profitability and competitiveness.
- Provide consumers with a safe, high quality food supply.
- Reduce environmental and human health risks associated with pesticide use.
- Support new business opportunities in consulting and production of new IPM products.
- Identifies new pest management tools through fundamental research and moves this science from the laboratory to the farm to solve priority pest control problems identified by farmers.

Internal and External Linkages:

- **Internal collaborations to accomplish program and objectives:**
 - Research and extension faculty in the departments of Entomology; Plant Pathology; Agronomy and Plant Genetics; Soil, Water, and Climate; Horticultural Science; Plant Biology; Applied Economics.
 - University of Minnesota Extension Service
 - Center of Alternative Animal and Plant Products (COAFES)
 - USDA/ARS
 - MN Institute for Sustainable Agriculture

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Wheat and Barley Growers
- MN Soybean Growers Association
- MN Corn Growers Association
- MN Wild Rice Growers Association
- MN Independent Crop Consultants
- MN Vegetable Growers Association
- MN Flower Growers Association,
- MN Potato Growers; Landscape; Nursery

Target Audiences:

- Producers
- Extension Educators
- Crop consultants
- Crop Protection Chemicals Industry
- Fertilizer Industry
- Consumers

Program Duration:

Five years

Goal 4-Program 3: Increasing and Maintaining Diversity in Agricultural Systems

Statement of Issue:

Diversity is an element of the complex system of interactions that provide resilience and long-term stability in the natural world. In our current agricultural systems we have replaced interactive systems with a reliance on technology fixes to both biological and environmental problems associated with these systems.

Formerly, many Minnesota crop rotations included a mix of perennial and annual crops. In southern and southwestern Minnesota, crop diversity has declined in recent decades, leaving approximately 75% of the land area in a simplified corn and soybean rotation. In Northern Minnesota, the small grain production systems has been hard hit by diseases associated with continuous small grain production. Livestock farms have become larger, fewer, and more specialized. The diversified livestock farm that included multiple species and a diversified cropping system has also declined.

Current emphasis on the large-scale growing of a few crops and animal species has consequences in terms of disease susceptibility, environmental and ecological degradation, and economic limits. Increasing the species diversity of Minnesota's agriculture will help to insure a viable future.

Output / Outcome Indicators

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer reviewed publications
- Industrial applications of findings

Performance Goals: will vary with research

Key Components:

- Identify and develop new plant traits, new cropping systems, and new rotations that will increase diversity.
- Identify animal traits that enhance adaptability and disease resistance, alternative animal species, and new production systems for livestock to improve diversity and enhance sustainability.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Horticultural Science; Entomology; Plant Biology; Plant Pathology; Animal Science, Biosystems & Agricultural Engineering.
- University of Minnesota Extension Service
- Center for Alternative Plant and Animal Products (COAFES)
- USDA/ARS
- MN Institute for Sustainable Agriculture
- Veterinary Medicine

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Wheat and Barley Growers
- MN Soybean Growers Association
- MN Corn Growers Association
- MN Wild Rice Growers Association
- MN Independent Crop Consultants
- MN Vegetable Growers Association
- MN Pork Producers

- MN Cattleman's Association; MN Turkey Growers,
- MN Milk Producers Association

Target Audiences:

- Producers
- Extension Educators
- Crop consultants
- Consumers

Program Duration:

- Five years

Goal 4-Program 4: Sustainable Agriculture

Statement of Issue:

Agriculture is a system in which the land, the people and the production of food are interwoven. One aspect of the system cannot be changed without influencing all of it. Efforts to improve agriculture should take care to balance the long-term economic, ecological and social effects.

The Minnesota Institute for Sustainable Agriculture (MISA) is a unique partnership between the College of Agricultural, Food, and Environmental Sciences at the University of Minnesota and the Sustainers' Coalition, a group of individuals and non-profit organizations. The purpose of MISA is to bring together the diverse interests of the agricultural community with interests from across the University community in a cooperative effort to develop and promote sustainable agriculture in Minnesota and beyond.

Output / Outcome Indicators

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications
- examine and evaluate current management systems for environmental impact.

Performance Goals: will vary with research

Key Component:

- Facilitate the internalization of sustainable agriculture into the University so that the concepts permeate teaching, research and extension.

- Work with rural communities in discovering and implementing the values of sustainability.
- Develop a method for defining the sustainability of agricultural systems and for assessing their impacts on rural communities.
- Promote sustainable community development principles throughout Minnesota.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Horticultural Science; Entomology; Plant Biology; Plant Pathology; Biosystems & Agricultural Engineering; Animal Science.
- University of Minnesota Extension Service
- Center for Alternative Plant and Animal Products (COAFES)
- USDA/ARS
- MN Institute for Sustainable Agriculture
- Sociology

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Wheat and Barley Growers
- MN Soybean Growers Association
- MN Corn Growers Association
- MN Wild Rice Growers Association
- MN Independent Crop Consultants
- MN Vegetable Growers Association
- MN Pork Producers

Target Audiences:

- Producers
- Extension Educators
- Crop consultants
- Consumers

Program Duration:

Five years

Goal 4-Program 5: Water Resource Management

Statement of Issue:

Today, many farmers are aware that their farming practices can have a far-reaching effect on Minnesota's rivers and streams. The evidence that some practices were detrimental has been clear for some time: agricultural runoff was one of the major factors in the pollution of the Minnesota River Basin. Others among Minnesota's thousands of lakes and streams also suffered from runoff. Responding to this problem, many farmers have adopted methods of production and management to minimize soil erosion and runoff from nutrients and pesticides -- thus working to improve the quality of Minnesota's rivers and lakes.

However, the Minnesota River is considered one of the 20 most endangered waterways in America. A report by the Minnesota Pollution Control Agency (MPCA) entitled Minnesota River Assessment Project (MRAP) documented frequent violations of federal or state standards for bacteria, phosphorus, turbidity, and dissolved oxygen at several monitoring stations along the Minnesota River or its tributaries. MRAP suggested several possible sources for these pollutants, including feedlots, septic systems, wastewater treatment plants, stream and ditch erosion, and runoff or erosion from agricultural lands. MRAP presented both an agency and a citizens advisory group plan for implementation of practices to control pollution in the Minnesota River basin.

To address these issues, research is being conducted develop a systematic, comprehensive, and scientific approach for addressing agricultural profitability and non-point source pollution reduction in the Minnesota River basin.

Output / Outcome Indicators

- CRIS Reports
- MN IMPACTS
- Number of refereed journal articles and other peer review publications

Performance Goals: will vary with research

Key Components:

- Develop a framework for describing and taking inventory of characteristics of the Minnesota River basin that affect non-point source pollution, agricultural management practices and their potential for reducing non-point source pollution.

- Develop an inventory for research on the risk associated with adopting crop and pasture management practices that can reduce non-point source pollution.
- Identify knowledge gaps and research needs for non-point source pollution in the Minnesota River basin.
- Develop an educational outreach program for disseminating information about the Minnesota River basin and to accelerate the adoption of farming practices to reduce agricultural NPS pollution.
- Describe and evaluate the performance of various simulation models used for estimating the impact of farm management practices on NPS pollution in the Minnesota River basin.

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Biosystems and Agricultural Engineering
- University of Minnesota Extension Service
- USDA/ARS
- MN Institute for Sustainable Agriculture
- MN Water Resources Research Institute
- University of Minnesota Water Resources Center
- College of Natural Resources

• **External Collaborations:**

- Minnesota Department of Agriculture
- National Institutes of Water Resources
- MN Board of Water Resources
- State and local governments
- MN Wheat and Barley Growers
- MN Soybean Growers Association
- MN Corn Growers Association
- MN Wild Rice Growers Association
- MN Independent Crop Consultants
- MN Vegetable Growers Association

Target Audiences:

- Producers
- Extension Educators
- Crop consultants

- MN State Agency Personnel
- Consumers

Program Duration:

Five years

Goal 4-Program 6: Animal Waste Management

Statement of Issue:

A strong livestock industry is essential to Minnesota's economic stability, the viability of many rural communities, and the sustainability of a healthful and high quality food supply for the American public.

Manure management is becoming a critical component in the planning and operation of livestock and poultry production in the state. Manure must be collected, stored, and utilized on animal production operations in an environmentally friendly manner to meet state regulations and exist in an increasingly environmentally conscious society. Major environmental issues center on water quality (surface and groundwater), gaseous emissions including odors, soil phosphorus levels, and pest production.

Odors from livestock production systems pose significant nuisances to surrounding communities, including the producers themselves, as well as residential neighbors and farmers. However, there is concern that some compounds may possess some human health hazards, particularly that of hydrogen-sulfide. Some livestock systems are believed to generate this substance to areas within one or two miles of its source.

If the odor problem isn't dealt with, Minnesota's livestock producers may not be able to remain viable over the long term. The emergence of odor control regulations and systems will force management practices to change. Technological changes may also occur to minimize odor generated from manure storage. This may become so cost prohibitive that Minnesota could experience a dislocation of its livestock producers. From a consumer standpoint, the costs of odor control technology may increase the cost of animal or meat products by a slight margin. However, this would be preferable to an industry exodus from Minnesota, which could otherwise occur if sudden, stringent regulations were to take effect.

Ultimately, the livelihoods of 40,000 livestock producers could be helped across the state over the next 10-20 years. By proactively minimizing the

odor problem, the livestock industry will be more inclined to stay in Minnesota, and thus jobs in this sector will be maintained. However, we expect a neutral economic improvement overall. The introduction of odor-control technology will add to production costs, but these will be offset by lower legal, social, and real costs of dealing with odor issues over the long term.

Other long term environmental impacts such as ammonia release and greenhouse gas production from animal production systems, and policy questions surrounding change and uncertainty in the livestock industry, are among the most important facing agriculture today.

Output / Outcome Indicators

- CRIS Reports
- MN Impacts
- Number of refereed journal articles and other peer reviewed publications
- Application of findings

Performance Goals: will vary with research

Key Components:

- Waste management and cropping systems research and education to minimize environmental costs associated with animal agriculture.
- Improved animal manure handling, storage, and application management systems.
- Improve design of animal production systems.

• Internal collaborations to accomplish program and objectives:

- Research and extension faculty in the departments of Agronomy and Plant Genetics; Soil, Water, and Climate; Biosystems and Agricultural Engineering; Animal Science; Entomology.
- College of Veterinary Medicine
- University of Minnesota Extension Service
- Center of Alternative Animal and Plant Products (COAFES)
- USDA/ARS
- MN Institute for Sustainable Agriculture

• External Collaborations:

- Minnesota Department of Agriculture
- MN Pollution Control Agency
- MN Associate of Counties
- MN Pork Producers

Internal and External Linkages:

• **Internal collaborations to accomplish program and objectives:**

- Research and extension faculty in the departments of Horticultural Science; Agronomy and Plant Genetics; Soil, Water, and Climate; Entomology; Plant Biology; Plant Pathology; and Biosystems and Agricultural Engineering.
- University of Minnesota Extension Service
- Center for Alternative Plant and Animal Products (COAFES)
- USDA/ARS
- MN Institute for Sustainable Agriculture
- Master Gardner program
- Landscape Arboretum

• **External Collaborations:**

- Minnesota Department of Agriculture
- MN Commercial Flower Growers Association
- MN State Horticultural Society
- Mn Turf & Grounds Association
- Mn Landscape & Nursery Association
- MN Nurserymen's Res. Corp.

Target Audiences:

- Turf industry
- Landscape Industries
- Extension Educators
- Nursery Industries
- Public
- Land use planners
- State and local governments
- Master gardeners

Program Duration:

Five years

Goal 1-Program 12. Horticultural Food Crops

Statement of Issue:

The production, marketing, and selling of fruit and vegetable crops are a growing industry in Minnesota. Minnesota commercial food crop

- MN Beef Producers
- MN Corn Growers Association
- MN Turkey Growers Association
- MN Soybean Growers Association
- MN Milk Producers Association

Target Audiences:

- Producers
- Extension Educators
- State and local governments
- public

Program Duration:

Five years

Goal 5. Empower people and communities, through research-based information and education, to address the economic and social challenges facing our youth, families, and communities. (Enhanced economic opportunity and quality of life for Americans.)

Statement of Issues

Global economic changes require rapid changes in rural economies and diversification of local economic bases. Economic opportunities in both rural and urban areas depend significantly on the health of existing businesses, on the availability of affordable housing, and on the organization, delivery and finance of local government services. To remain healthy and viable, businesses in rural communities increasingly need information about local labor markets and employment trends, and assistance in market evaluation, new product development, and improved small business decision-making.

Local communities and local governments are facing an increasingly complex set of challenges and problems. In many cases, revenues are not growing as rapidly as service demands from the public. Communities dominated by agricultural interests are in the process of economic and demographic change. Poverty is increasing. Many communities are struggling with the availability of affordable health care, particularly for the elderly. In addition, in rural Minnesota, the ethnic and racial demographics are changing dramatically. All of these changes are frequently accompanied by community conflict, paralysis, and polarization

around such issues as urban/rural and race, when cooperation and collaborative problem solving are needed to address community problems.

Economic, environmental and social issues are becoming increasingly complex, especially in rural communities. These communities are challenged to address issues that often involve sharply divergent views, problems and solutions that are unclear, stakeholders that are newcomers and/or have not previously been involved in these issues, and public policy implications that require attention by all facets of the community to reach acceptable solutions. While these demands are growing, many rural communities are also experiencing population declines and a lack of individuals willing to step forward to take on leadership roles in their communities. Preparing citizens and communities to be entrepreneurial and make use of new technologies that capitalize on unique local and regional resources is critical to continuing economic development.

Families in Minnesota face many challenges. Even those families which would be labeled as "thriving" face daily challenges. Other families lack the resources, assets, or skills they need to be healthy as a family unit. Quality child care issues will increase in importance as the Welfare-to-Work transition takes place.

Programs that respect individual and cultural differences build strengths in the people they serve. Many families and individuals are increasingly challenged in meeting their financial needs because of reduced incomes due to job lay-offs, unemployment and underemployment. This is particularly true for low income families.

Output / Outcome Indicators

- CRIS reports,
- MN IMPACTS
- Peer reviewed publications

Performance Goals: will vary with research

Key Program Components

The focus is on empowering people and communities through research based information to address the economic and social challenges facing youth, families, and communities. Specific research addresses the relationship of supply and demand for housing in rural communities, on understanding family businesses as a vehicle for economic development, on improving management decision-making of small business owners relative to business structures, on product development and market evaluation, on relationships between the viability of rural family

businesses and family functioning. Research efforts include study of processes and patterns of community adaptation, acceptance of youth and frail elders and various minority groups in Minnesota, i.e., Hispanic, Hmong, Vietnamese, Native American. Research examines characteristics of family systems to identify impact of environment and decision-making on quality of marriage and family life.

Internal and External Linkages

- **Internal collaborations:**

- College of Human Ecology, College of Agriculture Food and Environmental Sciences, University of Minnesota-Crookston Campus, University of Minnesota-Morris Campus, Hubert H. Humphrey Institute of Public Affairs, the College of Natural Resources, the College of Architecture and Landscape Architecture, the College of Education and Human Development, Medical School, Center for Urban and Regional Affairs, the Children, Youth and Families Consortium, Irving Harris Institute for Early Childhood Development, University Migrant Project, and the Student Legal Service.
- Federal CYFAR Initiative, including the National Network for Family Resiliency, National Network for Child Care, National Network for Health, National Network for Collaboration, CYFERNet, Irving Harris Institute for Early Childhood Development,

- **External collaborations:**

- Minnesota Department of Trade and Economic Development, Minnesota Department of Agriculture
- Minnesota Supreme Court, Minnesota Association of Legal Aid Lawyers, Local judges, family law and estate planning attorneys, Minnesota Bar Association, court administrators, police departments, Minnesota Department of Corrections, divorce and custody mediators, family support and advocacy groups.
- Minnesota Department of Children Families and Learning, Child Care Resource and Referral Early Childhood/Family Education Programs, high school teachers, community education professionals, US Department of Education, Early Childhood Family Education, Minnesota Coalition for Family Policy, Search Institute, professional associations of clergy, local child care provider associations
- Minnesota Department of Health, county public health, social services and workforce centers, family non-profit agencies
- Minnesota Department of Human Resources, U.S. Department of Health and Human Services

- Internal Revenue Service, the Minnesota Department of Revenue, the Council of Churches, United Way agencies, the Minnesota Alliance for Children, a range of local social service agencies, domestic abuse programs, violence prevention programs, Minnesota Board of Aging
- Ethnic advocacy groups including Asian Media Access, Vietnamese Social Services, United Cambodian Association of Minnesota, Hmong American Partnership,
- Minnesota Rural Futures, Minnesota Agri-Women.
- county and city officials, Minnesota State Auditor, League of Cities, Association of Minnesota Counties
- The Minnesota Academic Excellence Foundation, the Minnesota Association of School Administrators, the Minnesota Association of School Principals, regional initiative funds, School to Work Partnerships, Family Service Collaboratives.
- Other land grant universities
- Family businesses, local community action groups, local leaders and advocates

Target Audiences

- Researchers, Extension Educators, undergraduate and graduate students
- State development agency staff, local economic development officers and regional planners, housing professionals
- Local elected officials, county, city and township officials, public policy makers and active citizens, policy advocates, local school officials and teachers, youth as community resources
- Farm and main street business people, agricultural processors, small business employers and employees
- Health care professionals and providers, health consumers
- Families, especially low income families and young people of all ages, especially those at risk
- Migrants and immigrants, communities of color, local agencies and advocacy groups for communities of color
- Parents, family therapists, psychologists, social workers, human service providers, early childhood professionals, child care providers, public health staff, child protection workers, violence prevention specialists, criminal justice professionals, lawyers, family educators, law enforcement professionals, other family professionals

Program Duration

5 years

**University of Minnesota
Implementation of Plan of Work for Research
in the Agricultural Experiment Station
Federal Fiscal Years 2000-2004**

Appendices

1. Regional Agricultural and Natural Resources Sustainable Development Partnerships - Operating Principles
2. Affirmative Action Program for the University of Minnesota
3. Guidelines for Proposals for Rapid Response Funds
4. Reviewer Forms for AES Projects
5. Compacts:
 - College of Agricultural, Food, and Environmental Sciences
 - College of Biological Sciences
 - College of Natural Resources
6. Multi-State Research Project Participation at the University of Minnesota
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Appendix 1

Regional Agricultural and Natural Resources Sustainable Development Partnerships - Operating Principles

University of Minnesota Legislative Request

Connecting the University to the Community: Regional Agricultural and Natural Resources Sustainable Development Partnerships

2000-2001 Biennial Budget Request

◆ Purpose

The purpose of the Regional Agricultural and Natural Resources Sustainable Development Partnership is to sustain Minnesota's natural resource-based industries by addressing community-identified issues in partnership with the University of Minnesota on an on-going, long-term basis.

◆ Future Impacts/Benefits

This initiative provides an opportunity for citizens to connect directly to the resources of the University of Minnesota to meet local needs. Because this is a citizen-driven partnership, citizens will determine local needs and engage with University of Minnesota faculty to meet those needs. As the capacity for partnership is developed, the initiative is designed to become a positive force in forging new relationships across the state. Issues in agriculture, natural resources, and tourism will be addressed in local arenas with financial resources and available local and University expertise.

◆ Initiative Goals

- Enhance partnerships between the University and the people of Minnesota in a citizen-driven process for the purpose of identifying and addressing local, regional, and statewide agricultural, environmental, and tourism issues.
- Direct research, education and outreach dollars to meet agreed-upon local, regional, and statewide needs.
- Increase community involvement in and access to the research, education, and outreach capacities of the University of Minnesota.
- Foster the development of agricultural and natural resources systems that increase profitability for citizens while enhancing environmental quality and supporting rural communities.

◆ Bedrock Principles

The three bedrock principles of the partnership concept are:

- 1) Developing a richer and more vibrant partnership with the citizens of the regions and their land grant university.
- 2) Addressing agriculture and natural resource issues in a manner consistent with sustainable development principles.
- 3) Working in an active citizenship participation mode.

◆ Partners

The partnership is between the citizens of the state and the University of Minnesota College of Agricultural, Food and Environmental Sciences (COAFES), the College of Natural Resources (CNR), and the University of Minnesota Extension Service (Extension).

◆ Background

The 1997 Legislature appropriated \$1.2 million for initiating the regional partnership concept in three regions of the state: Northeast, Southeast, and Central. Regional boards have been selected and programs are being developed.

◆ Structure and Governance

The regional initiative includes a team comprised of citizen representatives, some of whom are University of Minnesota faculty. Two delegates from each region plus the regional staff person serve on the Statewide Coordinating Committee.

Statewide Coordinating Committee

Responsibility

Organize relationships across partnerships, document and share learnings, expand number of partnerships in the state, develop communications program, identify statewide needs, and develop accountability process.

Membership

Currently comprised of 14 members -- 2 delegates and 1 staff from each of 3 regions; representatives of deans of the 3 participating colleges; and 2 citizens from the original Partnership Task Force.

Activities

- Review the regional teams' proposed local, regional and statewide plans.
- Seek commonalities among work in the regions, and integrate into statewide agenda for long-term research, education, and outreach.
- Provide a forum for regional representatives to share projects, experiences, problems and challenges and learn from each other.

Regional Teams

Each of the 3 pilot regions has a 15-20 member team.

Responsibility

Work with local communities to identify needs and develop long-term plans for local, regional, and statewide research, education, and outreach programs.

Membership

Members are elected for one to three year terms by members of the regional team at the regional partnership annual meeting. A diverse and balanced membership is sought in each region with particular attention paid to geographic, racial, gender, age, and economic balance. Each regional team is comprised of citizens, some of whom are farmers; representatives of non-profit organizations, business and industry, and public agencies; and University of Minnesota faculty, including University of Minnesota Extension Service educators.

Activities

- Identify and implement methods for community input, including participatory rural appraisal, town meetings, surveys, and other methods developed by the regional team.
- Coordinate local community efforts throughout the year to:
 - Inventory assets in the community (environmental, human, social, and financial/manufactured capital)
 - Identify issues and trends
 - Develop a long-term action plan to address goals
 - Ensure fiscal and programmatic accountability
- Disburse funds for local and regional research, education, and outreach programs.
- Host an annual meeting to report on activities and elect new members.

Research Education and Outreach Program Teams

These teams will eventually be designed to respond to community needs and opportunities through design, implementation, and evaluation of long-term research, education, and outreach programs.

Budget	\$1,200,000
<i>Annual Budget</i>	\$ 600,000
<i>Community outreach/input activities and local and regional research, education and outreach programs</i>	\$ 600,000
Total for Biennium	<u>\$1,200,000</u>

◆ Accomplishments to Date

- Established the Partnership Task Force, a twelve member group of citizens and faculty representatives charged with developing the Guidelines and Operating Principles for the initiative.

- The Partnership Task Force developed the Guidelines and Operating Principles and a process to provide transition to begin the work in three pilot regions in the state -- Northeast, Southeast, and Central.
- An interim coordinator is in place to facilitate the work of the regions through the start-up phase, to coordinate communication, and to assist in the initial work of the Statewide Coordinating Committee.
- In each of the regions a Nominating Committee was formed to engage citizens and University of Minnesota faculty.
- The regional partnerships are in place and functioning in each of the three pilot regions of the state -- Northeast, Southeast, and Central.
- A job description for the search for a staff person was developed in each region and the search was initiated. The staff persons in the Central and Southeast regions are hired and the search process is underway for the Northeast staff person, with all indications being that the Northeast staff person will be hired in January, 1999.
- The regional groups are working on developing concepts to guide the work in the regions, identifying projects, developing a resource mapping project, and developing structure and communication plans for their regional initiatives.
- A Statewide Coordinating Committee has been formed with two delegates plus staff from each region, representatives of the deans of each college in the partnership, and two representatives from the original Partnership Task Force.
- A transition was made from the Partnership Task Force to the Statewide Coordinating Committee, which now has full responsibility for the coordination of the on-going work in the regions and for the expansion of the program.

◆ Southeast Region Work

- Board of Directors of 17 was appointed, representing a diverse cross-section of interests including agriculture, the University of Minnesota, civic leadership, business leadership, natural resources, tourism, and the Extension Service.
- Executive director with University of Minnesota background and with established sustainable development experience in Minnesota was hired in November.
- Regular board meetings held each month since April in addition to a day-long board retreat.
- Four standing board committees appointed in October:
 - Executive/Finance Committee
 - Resource Mapping Committee
 - Public Relations Committee
 - Education Committee
- Extensive meetings and interviews held throughout the southeastern Minnesota region and at the University of Minnesota (Rural Development Council, Minnesota Institute for Sustainable Agriculture, etc.) over the past two months.
- Numerous meetings/conversations conducted with foundations and other support institutions (Land Stewardship Project, McKnight Foundation, Hiawatha Sustainable Woods Project, etc.).

- Resource mapping project design phase underway in cooperation with the Minnesota Department of Natural Resources.
- Qualification criteria development underway for selection of up to a half dozen high-payoff sustainable development projects and three University of Minnesota partnerships by the end of 1999.

(Submitted by Southeast Executive Director)

◆ Central Region Work

- Regional Task Force of 16 members appointed representing agriculture, tourism and natural resource perspectives. Currently three University faculty and thirteen regional community representatives make up this regional board of directors. Standing committees include an executive committee plus three program committees (agriculture, tourism, and natural resources.) Regular board meetings have been held since January, with significant volunteer efforts prior to that time.
- Criteria for funding regional sustainable development projects were developed and eight research/education projects were approved for funding by the Task Force in 1998. Extensive input from regional producers, industry and agency personnel, and other interested citizens helped form the proposals. These projects had a production and environmental focus, with an emphasis on forage, edible bean, and other row crop problems identified within the region.
- An executive director with extensive University of Minnesota outreach experience was hired in September to coordinate task force activity and increase community involvement in Regional Partnership projects. New project teams are currently developing around economic and environmental themes in livestock production, commercial horticulture opportunities, by-product nutrient utilization, agro-forestry, and agro-tourism opportunities.
- Numerous conversations have been held with stakeholders in natural resource issues, including the Sustainable Farming Association, regional foundations, and agency personnel. An overriding goal is to enhance, not duplicate, efforts already in place.

(Submitted by Central Executive Director)

◆ Internal or In-kind Funding and Support Leveraged Since 1997

The Partnerships have benefitted from many different kinds of internal support provided by COAFES, CNR, and Extension, including critical faculty involvement in the planning and development phases of the project. Several faculty have been nominated and are serving as members of Regional Task Forces, which involves at least one 4-5 hour meeting per month. COAFES, CNR, and Extension have also provided an approximate total of \$30,000 for ongoing interim coordination, and three deans' representatives contribute time to the ongoing work of the Statewide Coordinating Committee. The Experiment Station contributes financial services for the on-going work of the partnerships.

The University of Minnesota Extension Service has contributed benefits and at least 50% of the salary of each regional staff person in three pilot regions (total estimated at \$125,000).

Office space for Interim Coordination has been provided by Biosystems and Ag Engineering on the St. Paul Campus, while the Minnesota Institute for Sustainable Agriculture within COAFES has contributed support services for mailings and on-going project communication.

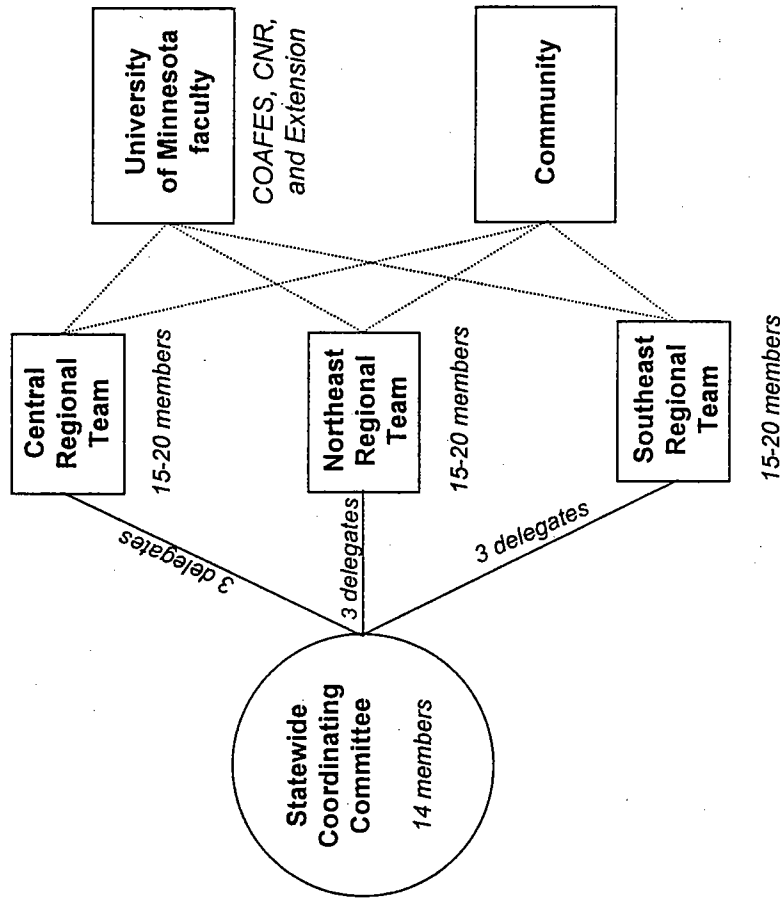
Finally, a number of citizens continue to provide leadership in the development of the concept; regional citizen representatives receive a small honorarium for time contributed at meetings and on project work.

◆ **Contact Information**

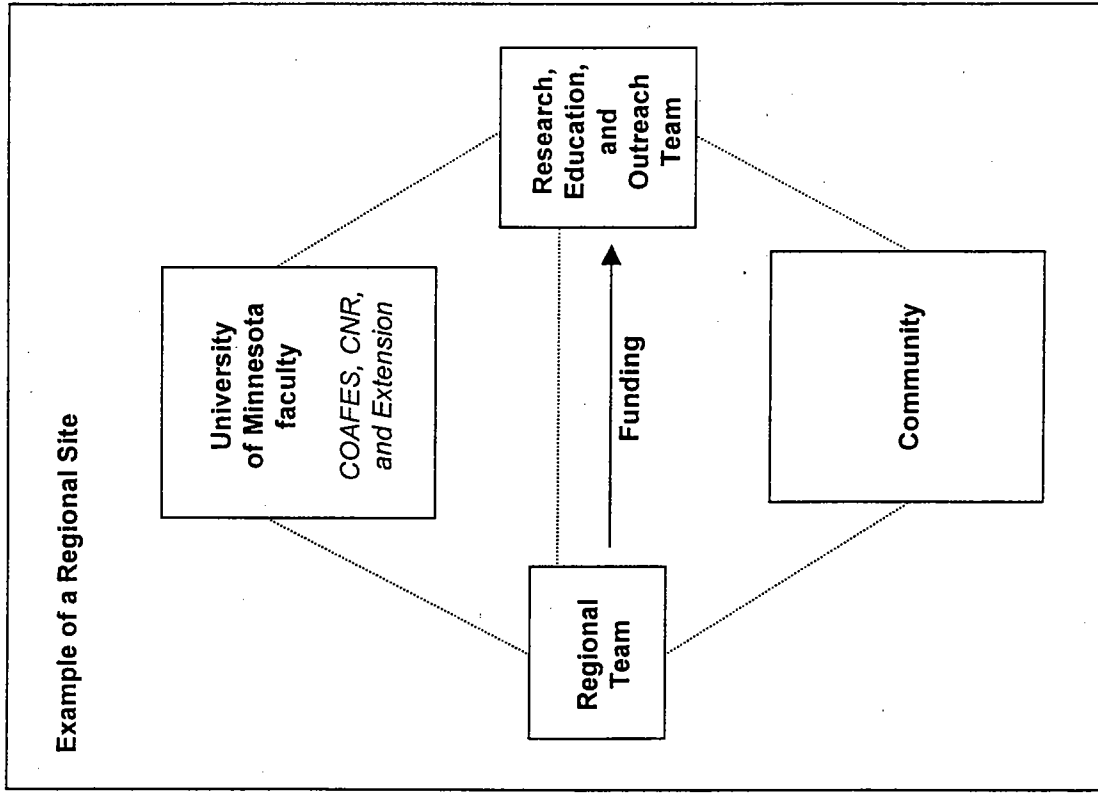
For more information on the Regional Agricultural and Natural Resources Sustainable Development Partnerships, contact:

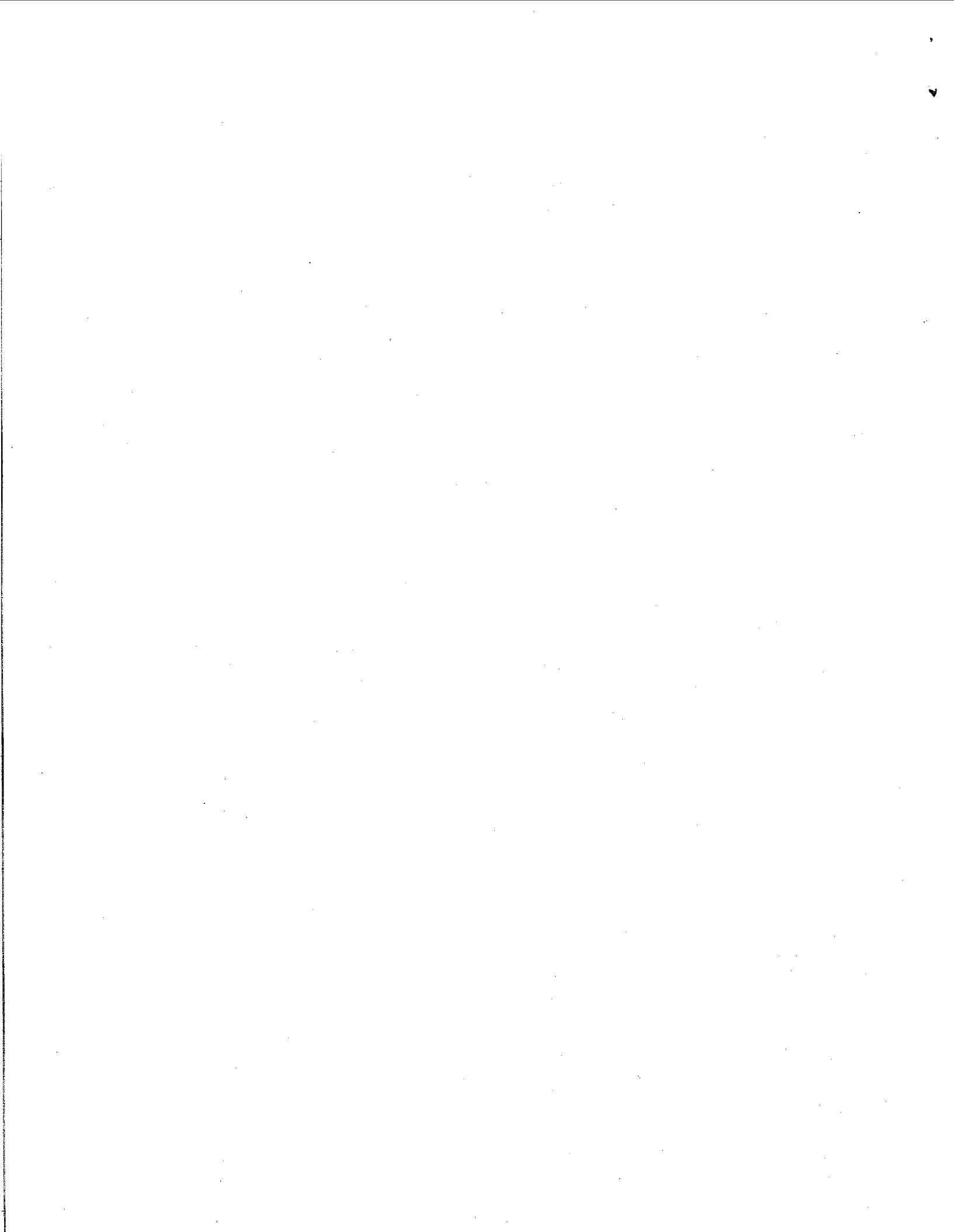
Pat Henderson
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St. Paul, MN 55108
(612) 624-0783
(612) 624-3005 (fax)
patsway@aol.com

Regional Agricultural and Natural Resources Sustainable Development Partnership



- Partners:**
- Citizens of the State of Minnesota
 - University of Minnesota





Appendix 2

Affirmative Action Program for the University of Minnesota



AFFIRMATIVE ACTION PROGRAM
FOR THE
UNIVERSITY OF MINNESOTA

Tax Identification Number:
41-600-7513

Inclusive dates:
APRIL 1, 1999 - MARCH 31, 2000

Prepared by:
OFFICE OF EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION

JULIE A. SWEITZER
Director

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363; by the Federal Civil Rights Act, 42 U.S.C. 2000e; by the requirements of Title IX of the Education Amendments of 1972, by Sections 503 and 504 of the Rehabilitation Act of 1973; by the Americans with Disabilities Act of 1990; by Executive Order 11246, as amended: 38 U.S.C. 2012, the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity.

Inquiries regarding compliance may be directed to Julie A. Sweitzer, Director and University Equal Opportunity Officer, Office of Equal Opportunity and Affirmative Action, 419 Morrill Hall, 100 Church St. SE, Minneapolis, MN 55455, (612) 624-9547.

This material is available in alternative formats upon request. Please contact Marilyn Trettel, the Office of Equal Opportunity and Affirmative Action, 419 Morrill Hall, 100 Church St. SE, Minneapolis, MN 55455, (612) 624-9547, Fax: (612) 624-5223, TTY: (612) 626-8947.

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Semiannual Compliance Report, State Department of Human Rights, November 1998

APPENDIX II.

60.2.11 (a) FCE015-1, Civil Service Workforce Analysis by Parent Dept. Payroll Period: October 1998, 12/17/98

APPENDIX III.

60.2.11 (b) FCE053-1, Civil Service Availability Analysis by Major Job Group, Final Report, Goal Year: 1998 - 1999, 12/15/98

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- 60.2.11 (c) FCE054-1, Civil Service Workforce Utilization Analysis by EEO-6/Job Group by School/College/Administrative Unit.
Payroll Period: October 1998, 12/17/98
- 60.2.13 (e) FCE055-1, Civil Service Goals and Timetable by EEO-6/Major Job Group (by campus), Goal Year: 1998 - 1999, 12/17/98

APPENDIX V.

- 60.2.11 (a) FCE008-1, Academic Workforce Analysis for Faculty by Parent Dept.,
Payroll Period: October 1998, 11/6/98

APPENDIX VI.

- 60.2.11 (b) FCE012-1, Academic Availability Analysis for Faculty Parent Dept.,
Goal Year: 1998 - 1999, 12/17/98

APPENDIX VII.

- 60.2.11 (c) FCE014-1, Goals and Timetables for Faculty by Parent Dept.,
Payroll Period: October 1998, 12/17/98

APPENDIX VIII.

- 60.2.11 (a) Academic Workforce Availability and Utilization
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- (c) Non-faculty (Professional and Administrative)

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(Please see the following web site: www.umn.edu/ohr)

University Grievance Policy, April 16, 1993

Guidelines for Academic Searches, July 1998

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For the following documents, please visit the office's web site:
www.EOAFFACT.umn.edu

Regent's Policy on Equal Opportunity, July 7, 1993
EO/AA Brochure
Sexual Harassment Policy
Regent's Policy on Diversity, Equal Opportunity and Affirmative Action
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Form 17, Summary of the Affirmative Action Process, rev. June 1996

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Form 24, Applicant Tracking Record for Academic Positions, rev. May 1992

University of Minnesota Employment Application, rev. September 1993

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I. REAFFIRMATION OF THE EQUAL OPPORTUNITY POLICY
41 CFR 60-2.13(a)

The University of Minnesota reaffirms its policy of providing equal opportunity to all employees and applicants for employment in accordance with all applicable laws, directives and regulations of federal, state and local governing bodies or agencies thereof, including Minnesota Statutes 363. The Board of Regents adopted the following policy on July 9, 1993:

The University of Minnesota is committed to the policy that all persons shall have equal access to its program, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

The Board of Regents passed its statement on Diversity, Equal Employment Opportunity, and Affirmative Action on September 7, 1995, and a copy of the policy follows this page.

Through these policies the University demonstrated its commitment to take affirmative action to ensure that all employment practices are free of discrimination. Such employment practices include, but are not limited to, the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, and selection for training, including apprenticeship.

The University of Minnesota requires all contractors, vendors and users of its facilities certify in writing their adherence to this policy of nondiscrimination and affirmative action. Special efforts will be made to award contracts to female, minority and disadvantaged business enterprises.

The University of Minnesota has established goals designed to encourage and support diversity throughout the institution's students, personnel, curriculum and all University activities. In implementing the budget and reallocation plan, administrators are required to include diversity-related impacts. A demonstrated record of support and achievement is of particular importance to reallocation-recipient units.

The University of Minnesota evaluates the performance of its administrative and supervisory personnel on the basis of their involvement in achieving its affirmative action objectives as well as other established criteria.

The University of Minnesota has appointed Julie A. Sweitzer as the University Equal Opportunity Officer and Acting Director of Equal Opportunity Programs. Her responsibilities include monitoring all Equal Opportunity activities and reporting the effectiveness of the University's Affirmative Action Programs on a quarterly basis. President Yudof will receive and review reports on the progress of the programs, including recommendations of necessary action to ensure attainment of the University's Equal Opportunity objectives. Any employee or applicant who believes he or she has been discriminated against may contact the Office of Equal Opportunity and Affirmative Action at 419 Morrill Hall, 100 Church St. S.E., Minneapolis, Minnesota, 55426, or call (612) 624-9547.



Mark G. Yudof, President
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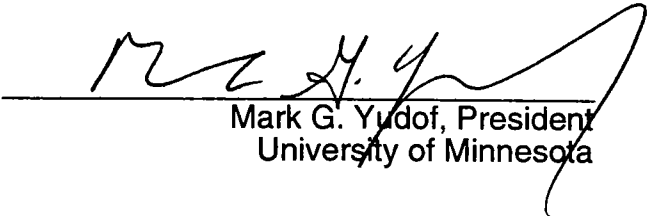
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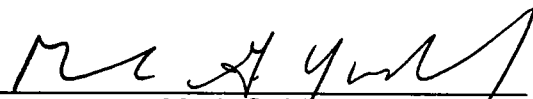
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Mark G. Yudof, President
University of Minnesota



UNIVERSITY OF MINNESOTA
BOARD OF REGENTS POLICY

Page 1 of 2

Administrative

**DIVERSITY, EQUAL EMPLOYMENT
 OPPORTUNITY, AND AFFIRMATIVE ACTION**

Adopted: September 7, 1995

Supersedes: (see end of policy)

**DIVERSITY, EQUAL EMPLOYMENT OPPORTUNITY, AND
 AFFIRMATIVE ACTION**

Subd. 1. Commitment of Purpose. Consistent with its academic mission and standards, the University of Minnesota is committed to achieving excellence through diversity. As a community of faculty, staff, and students engaged in research, scholarship, artistic activity, teaching and learning, or activities which support them, the University fosters an environment that is diverse, humane, and hospitable. As an institution, the University is a global enterprise which serves the state, the nation, and the world through its outreach and public service, and in partnership with community groups.

Subd. 2. Goals. The University shall seek to:

(1) provide equal access and opportunity to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status or sexual orientation;

(2) advocate and practice affirmative action including the use of recruiting and search processes to enhance participation of racial minorities, women, persons with a disability, and Vietnam era veterans;

(3) establish and nurture an environment that actively acknowledges and values diversity and is free from racism, sexism, and other forms of prejudice, intolerance or harassment, for men and women, faculty, staff, and students from varying racial, religious, and ethnic backgrounds, and of varying sexual orientations, as well as people with disabilities; and

(4) provide equal educational access to members of under-represented groups, and develop affirmative action admission programs where appropriate to achieve this goal.

Subd. 3. Promotion and Support. The University will promote and support diversity through its academic programs, its employment policies and practices, and the purchase of goods, materials, and services for its programs and facilities from businesses of the diverse communities it serves.

Subd. 4. Performance Goals. Administrative officers are directed to set performance goals consistent with this policy and the law, and energetically continue to implement the necessary programs and affirmative action administrative procedures for the achievement of these goals; to remedy any discriminatory practice which deviates from this policy; and to assess and reward the performance of individuals and units



**UNIVERSITY OF MINNESOTA
BOARD OF REGENTS POLICY**

Page 2 of 2

Administrative

**DIVERSITY, EQUAL EMPLOYMENT
OPPORTUNITY, AND AFFIRMATIVE ACTION**

Adopted: September 7, 1995

Supersedes: (see end of policy)

using the University's critical measures for the diversity performance goals as part of the University's planning and budgeting process.

SUPERSEDES: POLICY STATEMENT ON WOMEN ACADEMIC EMPLOYEES DATED JULY 13, 1990; EQUAL EDUCATIONAL ACCESS AND OPPORTUNITY DATED NOVEMBER 8, 1991; EQUAL OPPORTUNITY: FACILITIES DATED JULY 9, 1993; EQUAL OPPORTUNITY IN EMPLOYMENT DATED JULY 9, 1993; AND DIVERSITY DATED JULY 9, 1993.

II. DISSEMINATION OF THE POLICY

Internal

The University Equal Opportunity and Affirmative Action policy statement as adopted by the Board of Regents is available on the World Wide Web as part of the Regents' policies for the University of Minnesota. It is also included in the Office of Equal Opportunity and Affirmative Action (EO/AA) web page and distributed in the office's program brochure. The office brochure was mailed to all employees in November 1998. New employees receive copies of the statement and other information about the University's policy of equal opportunity and affirmative action at orientation programs.

The University has notified each labor union with which it has a collective bargaining agreement of its commitment to Equal Opportunity and Affirmative Action. The policy statement is included in each contract.

The policy statement is included in all appropriate University publications including all employee handbooks and policy books, which are available to all employees on the Web and distributed at training programs. It is also included in other media communications including, but not limited to, the Minnesota Daily and University TV and radio stations. The Equal Opportunity Policy statement is posted in University employment offices, placement offices, and other appropriate areas.

The University's Equal Opportunity and Affirmative Action officer conducts periodic meetings with academic deans and department heads to review their responsibility for effective implementation of the University's Affirmative Action Policy.

Each University administrative unit has designated a Unit Equal Opportunity Officer to disseminate in their department or unit information pertaining to the Affirmative Action Program. Workshops and seminars will be held semi-annually to counsel Equal Opportunity officers and Human Resources staff in ways to more effectively implement the University's Equal Opportunity and Affirmative Action Policies.

The University requires that all its contractors, including those supplying goods or services, be equal opportunity employers. The University of Minnesota Small and Targeted Group Business (TGB) programs are designed to promote the growth and development of small businesses located within the State of Minnesota.

University publications visually demonstrate the policy by including photos of university staff of color, women, and employees with disabilities.

External

All recruiting sources including universities, colleges, placement offices, women and minority professional organizations, public and private employment agencies, high schools, community organizations and other referral sources have been advised of the University's Equal Opportunity and Affirmative Action Policy and are encouraged to refer minorities and women for all positions.

The equal opportunity policy is included on all purchase orders, requisitions, and contracts covered by Executive Order 11246 (as amended) and implementing regulations.

Copies of the Equal Opportunity and Affirmative Action Policy will be made available to all potential employees. University publications visually demonstrate the policy by including photos of university staff of color, women, and employees with disabilities.

All contractors, subcontractors, vendors, and suppliers have been notified of the University's Equal Opportunity Policy and are required to comply with Executive Order 11246 (as amended) and its implementing regulations. The University has agreed to transact business only with firms adhering to these practices.

III. RESPONSIBILITY FOR IMPLEMENTATION

As the Chief Executive Officer responsible for the implementation of the Affirmative Action Program, the President of the University keeps the Board of Regents informed of the institution's progress in this area. The President receives and evaluates periodic progress reports from the Office of Equal Opportunity and Affirmative Action, the Vice Presidents and other administrative officers.

Julie A. Sweitzer serves as Director of the Office of Equal Opportunity and Affirmative Action, the University's Equal Opportunity Officer and reports to the Executive Vice President and Provost. The Director of the Office of Equal Opportunity and Affirmative Action has the authority and logistics support to review progress and the program continually to assure compliance with appropriate federal and state laws that apply to the University as a result of its contractual commitments with the stated University policy on Equal Opportunity and Affirmative Action. This includes reporting and recording systems that measure the effectiveness of the program.

The Director develops the Affirmative Action Plan, disseminates it, and coordinates training for employees on their responsibilities pursuant to the plan. Human Resources also conducts training, and consults with the Director of Equal Opportunity in its development. The Director will meet annually with vice presidents and deans to discuss the effectiveness of the program in their units, including the results of complaint activities. The Director is responsible for receiving, investigating and attempting to resolve all discrimination complaints.

The Associate Vice President for Multicultural Affairs, the Vice President for Human Resources and Vice Provost for Faculty and Minority Affairs also have related responsibilities for recruiting and retention of faculty, staff and students, and for enhancing the climate for diversity. Together with the Director of Equal Opportunity and Affirmative Action, they coordinate their activities to maximize resources.

The President has delegated to each Vice President the responsibility for ensuring that each of the administrative units complies with the terms of the equal opportunity and affirmative action policies set forth by the University as well as with the Executive Orders 11246 and 11375, "Revised Order No. 4," Title VII of the Civil Rights Act of 1964, and Title IX of the "Educational Amendments of 1972."

The Chancellors, Provosts, Vice Presidents, Deans, and other Chief Administrative Officers have the direct responsibility for ensuring compliance with University equal opportunity and affirmative action policies, Executive Orders 11246 and 11375, "Revised Order No. 4," and the most recent Guidelines for Higher Education Institutions which include Title IX, Sections 503 and 504 of the Rehabilitation Act of 1973, as amended.

Each campus and college, and in some cases units within colleges, have identified an Equal Opportunity officer who has the responsibility for the coordination of equal employment opportunity activities at the collegiate or unit level. The officers receive training from the Office of Equal Opportunity upon appointment. In addition the office has provided annual training for unit officers and human resources staff, which has been increased to semi-annual workshops. In addition, the central Office is a resource for periodic consultations with unit officers and HR staff.

Each department that admits students has the specific responsibility of ensuring that equal educational opportunity is provided to everyone. All offices which provide financial aid, placement, tutoring, counseling, and other student services are required to adhere to the principles of equal opportunity and affirmative action, and specifically abide by Title VI, Title IX and the 504 Regulations.

The Director of Purchasing requires each vendor, supplier and contractor to certify that they are an equal opportunity employer. The Director of Equal Opportunity is actively involved in the contracting program to assure affirmative action is given appropriate consideration.

IV. WORKFORCE ANALYSIS FOR TOTAL UNIVERSITY
41 CFR 60-2.11(a)

The University has reviewed its workforce for both academic and civil service employment as part of the annual update of the University's Affirmative Action Program (AAP). The workforce analysis reports are generated by parent department, class number and title, job group, salary range code, race and sex. These reports are generated from IPEDS data using October 16-31, 1997 payroll.

Employment Reports by Department, Administrative Unit and Campus

The C045 reports contain detailed and summary totals of disabled and veteran employees by department, class and EE0-6 category.

The FCE015-1 reports, Civil Service Workforce Analysis by Reporting Department, October 1997, are contained in Appendix II of the Affirmative Action Program (AAP).

The FCE008-1 reports, Workforce Analysis for Faculty by Reporting Department, October 1997, are contained in Appendix V of the AAP.

The Workforce Analysis for Academic Professional and Administrative Positions is contained in Appendix VIII of the AAP.

The FCE055-1 reports, a summary of nonacademic workforce by EE0-6 category by campus and total University, are contained in Appendix IV of the AAP.

A summary of academic and nonacademic workforce by race and gender follows, and a summary by disability and veteran status is provided in Section XV.

Academic Non-Student Employment for Total University
October 1998

EEO-6 Category	Total ¹	Minority							Female	Total
		Male	White	Black	Asian	Am Ind	Hisp	Male		
Exec/Admin	173 (100%)	102 (59.0%)	159 (91.9%)	9 (5.2%)	1 (0.6%)	0 (0.0%)	2 (1.2%)	7 (4.0%)	5 (2.9%)	12 (6.9%)
Faculty	3,452 (100%)	2,488 (72.1%)	2,960 (85.7%)	48 (1.4%)	198 (5.7%)	20 (0.6%)	53 (1.5%)	232 (6.7%)	87 (2.5%)	319 (9.2%)
Professor*	1,402 (100%)	1,197 (85.4%)	1,267 (90.4%)	10 (0.7%)	78 (5.6%)	5 (0.4%)	15 (1.1%)	97 (6.9%)	11 (0.8%)	108 (7.7%)
Assoc Prof	973 (100%)	671 (69.0%)	836 (85.9%)	18 (1.8%)	49 (5.0%)	5 (0.5%)	14 (1.4%)	62 (6.4%)	24 (2.5%)	86 (8.8%)
Assist Prof	818 (100%)	483 (59.0%)	639 (78.1%)	17 (2.1%)	61 (7.5%)	5 (0.6%)	19 (2.3%)	61 (7.5%)	41 (5.0%)	102 (12.5%)
Instructor	196 (100%)	85 (43.4%)	163 (83.2%)	3 (1.5%)	7 (3.6%)	4 (2.0%)	3 (1.5%)	6 (3.1%)	11 (5.6%)	17 (8.7%)
Other Fac#	63 (100%)	52 (82.5%)	55 (87.3%)	0 (0.0%)	3 (4.8%)	1 (1.6%)	2 (3.2%)	6 (9.5%)	0 (0.0%)	6 (9.5%)
Pro/Non Fac	3,284 (100%)	1,594 (48.5%)	2,788 (84.9%)	98 (3.0%)	96 (2.9%)	28 (0.9%)	37 (1.1%)	142 (4.3%)	117 (3.6%)	259 (7.9%)
Total	6,909 (100%)	4,184 (60.6%)	5,907 (85.5%)	155 (2.2%)	295 (4.3%)	48 (0.7%)	92 (1.3%)	381 (5.5%)	209 (3.0%)	590 (8.5%)

*Includes Regents' Professor; # the number includes Research Associate (9406), Research Fellow (9407), Chair (9360), Head (9361), Director (9362), Library Division Head (9363), and Crookston Division Director (9364)

¹Total employees include the five racial/ethnic categories, and nonresident aliens and other employees whose racial/ethnic designations are unknown. Therefore, totals by racial/ethnic category will not equal total employees and their percentages will not equal 100% of total employees.

About this Report

Please note that the employee counts prior to 1995 are not comparable. Program changes to replace the EEO-6 reports with the IPEDS reports are reflected in the 1995 tables.

Civil Service Non-Student Employment for Total University
October 1998

EEO-6 Category	Total ¹	Minority									
		Male	Female	White	Black	Asian	Am Ind	Hisp	Male	Female	Total
Exec/Admin	1,187 (100%)	392 (33.0%)	795 (67.0%)	1,065 (89.7%)	35 (2.9%)	14 (1.2%)	17 (1.4%)	17 (1.4%)	36 (3.0%)	47 (4.0%)	83 (7.0%)
Faculty	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Professional/ Non Faculty	2,020 (100%)	737 (36.5%)	1,283 (63.5%)	1,702 (84.3%)	49 (2.4%)	106 (5.2%)	27 (1.3%)	24 (1.2%)	58 (2.9%)	148 (7.3%)	206 (10.2%)
Clerical	2,441 (100%)	257 (10.5%)	2,184 (89.5%)	2,085 (85.4%)	126 (5.2%)	69 (2.8%)	18 (0.7%)	32 (1.3%)	40 (1.6%)	205 (8.4%)	245 (10.0%)
Tech/Parpro	1,961 (100%)	849 (43.3%)	1,112 (56.7%)	1,626 (82.9%)	67 (3.4%)	89 (4.5%)	22 (1.1%)	31 (1.6%)	98 (5.0%)	111 (5.7%)	209 (10.7%)
Skilled Craft	548 (100%)	539 (98.4%)	9 (1.6%)	498 (90.9%)	7 (1.3%)	5 (0.9%)	4 (0.7%)	8 (1.5%)	24 (4.4%)	0 (0.0%)	24 (4.4%)
Svc/Maint	1,157 (100%)	787 (68.0%)	370 (32.0%)	888 (76.8%)	130 (11.2%)	17 (1.5%)	15 (1.3%)	19 (1.6%)	141 (12.2%)	40 (3.5%)	181 (15.6%)
Totals	9,314 (100%)	3,561 (38.2%)	5,753 (61.8%)	7,864 (84.4%)	414 (4.4%)	300 (3.2%)	103 (1.1%)	131 (1.4%)	397 (4.3%)	551 (5.9%)	948 (10.2%)

¹Total employees include the five racial/ethnic categories, and nonresident aliens and other employees whose racial/ethnic designations are unknown. Therefore, totals by racial/ethnic category will not equal total employees and their percentages will not equal 100% of total employees.

About this Report

Please note that the employee counts prior to 1995 are not comparable. Program changes to replace the EEO-6 reports with the IPEDS reports are reflected in the 1995 tables.

V. AVAILABILITY ANALYSIS
41 CFR 60-2.11(b)

The University has reviewed availability data for both academic and civil service employment as part of its annual update of the University's Affirmative Action Program (AAP). The University has reviewed and considered the "8-factors" and 1990 State Manpower data.

In 1998 the University Equal Opportunity Office reviewed and updated the disciplines used in faculty availability calculations.

In 1994, the University Equal Opportunity Office and The Office of Human Resources reviewed the approximately 700 job titles/classifications by job group in order to update its list of corresponding or equivalent job titles/classifications in 1990 Equal Opportunity Special File for updating civil service availability. These data are reviewed annually along with data from the applicant tracing system from positions filled by job title, job group and Federal Occupational Category (FOC).

The FCE053-1, Analysis of Availability by Major Job Group, Goal Year: 1998 is available by campus for civil service employment. These reports are contained in Appendix III.

The FCE012-1 report, Availability Data for Faculty by Parent Department, Goal Year: 1998 are available by parent department and job group for faculty employment. These reports are contained in Appendix VI.

The availability analysis report for Academic Non-faculty by job group is available for the total university. This report is contained in Appendix VIII.

The availability sources for civil service, faculty and academic professional and administrative employees (P/A) are listed in Appendix IX.

VI. UTILIZATION ANALYSIS
41CFR 60-2.11 (c)

The University has reviewed availability and workforce for both academic and civil service employment by job group to determine underutilization of females and minorities. Underutilization is defined as 0.5 persons or greater in any job group pursuant to "Memorandum to College and University President," August, 1975 (Gerry Memorandum). The annual utilization analysis is based on the October 16 - 31 payrolls reflecting the Integrated Postsecondary Education Data System (IPEDS) reports.

The FCE054-1 report, Civil Service Workforce Utilization Analysis by EEO-6 Job Group, is generated by administrative unit for each campus. The report is contained in Appendix IV and summarized by campus in the FCE055-1 report.

The FCE014-1 report, Goals and Timetables for Faculty by Parent Department, indicates utilization and underutilization of females and minorities by job group. The report is contained in Appendix VII.

The workforce availability and underutilization of females and minorities for academic non-faculty staff by job group are contained in Appendix VIII.

Employee workforce, availability and goals are summarized for the total University in the following pages and by campus in Appendix IV.

UNIVERSITY OF MINNESOTA
Summary of Academic Non-Faculty Goals
1998-99

EEO-6 Job Group	ACADEMIC EMPLOYEES (P/A) 1		AVAILABILITY (PCT) 3		NUMBER TO GOAL 4	
	Total	Female No. & PCT	Minorities 2 No. & PCT	Female No. & PCT	Female	Minorities 2
Executive/Administration						
1A	71	24 (33.8)	7 (9.9)	27 (37.9)	3	1
1B	102	47 (46.9)	5 (4.9)	47 (45.6)	0	8
* Sub-Total	173	71 (41.0)	12 (6.9)	74 (42.8)	3	9
Administrative Faculty						
2	56	9 (16.1)	6 (10.7)	16 (28.3)	7	0
Professional/Non-Faculty						
3A	101	41 (40.6)	4 (4.0)	57 (56.9)	16	12
3B	86	35 (40.7)	8 (9.3)	49 (56.9)	14	6
3C	473	287 (60.7)	37 (7.8)	269 (56.9)	0	38
3D	275	188 (68.4)	21 (7.6)	156 (56.9)	0	22
3E	313	150 (47.9)	7 (2.2)	139 (44.3)	0	25
3F	90	65 (72.2)	8 (8.9)	72 (79.7)	7	0
3G	70	42 (60.0)	2 (2.9)	40 (57.1)	0	6
3H	163	73 (44.8)	13 (8.0)	62 (38.2)	0	21
3I	550	210 (38.2)	58 (10.5)	168 (30.6)	0	5
3J	619	307 (49.6)	51 (8.2)	335 (54.1)	28	42
3K	115	32 (27.8)	14 (12.2)	49 (42.6)	17	2
3L	48	16 (33.3)	4 (8.3)	26 (54.1)	10	3
3M	130	84 (64.6)	18 (13.8)	66 (50.5)	0	1
3N	198	147 (74.2)	11 (5.6)	107 (54.1)	0	20
3O	53	13 (24.5)	2 (3.8)	17 (32.0)	4	3
*Sub-Total	3284	1690 (51.5)	259 (7.9)	1612 (49.1)	96	206
*TOTALS	3457	1761 (51.0)	271 (7.8)	1686 (48.8)	99	215

1 Academic Employees (P/A): EEO-6 Data Base, Full-Time and Part-Time Employees, CO45-4 Report, October 1998.

2 Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

3 Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required in the job group to maintain availability.

4 Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group.

Summary of Civil Service Workforce, Availability and Goals by Campus

Total University

Goal Year: 1998-99

EEO-6 FOC Code	EMPLOYEES 1		AVAILABILITY (PCT) 3		NUMBER TO GOAL ⁴			
	Total	Male	Female No. & PCT	Minorities 2 No. & PCT	Female No. & PCT	Female Minorities ²		
Executive	1187	392	795 (67.0)	83 (7.0)	741.7 (62.5)	157.7 (13.3)	26.9 (3.6)	80.9 (51.3)
Professional	2019	737	1282 (63.5)	206 (10.2)	1193.6 (59.1)	311.7 (15.4)	64.0 (5.4)	118.4 (38.4)
Clerical	2436	256	2180 (89.5)	245 (10.1)	1947.7 (80.0)	374.7 (15.4)	1.9 (0.1)	130.7 (34.9)
Technical	1925	839	1086 (56.4)	207 (10.8)	1037.0 (53.9)	311.2 (16.2)	24.7 (2.4)	107.7 (34.6)
Skilled Crafts	548	539	9 (1.6)	24 (4.4)	36.4 (6.6)	28.4 (5.2)	27.4 (75.3)	5.8 (20.4)
Service	1154	785	369 (32.0)	181 (15.7)	388 (33.6)	280.4 (24.3)	64.0 (16.5)	105.8 (37.7)
Other*	45	13	32 (71.1)	2 (4.4)				
Totals	9314	3561	5763 (61.8)	948 (10.2)	5244 (56.3)	1464 (15.7)	209 (4.0)	549 (37.5)

(*) not assigned to a campus

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required to maintain availability in the appropriate job groups. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job groups. The percentage is the number of goals as a percent of total goals at availability. This number is related to the job groups where females or minorities are underrepresented.

Data Source: FCE055-1 report (AAP, Appendix IV)

Summary of Civil Service Workforce, Availability and Goals by Campus
Mpls. - St. Paul
Goal Year: 1998-99

EEO-6 JOB GROUP	EMPLOYEES 1		AVAILABILITY (PCT) 3		NUMBER TO GOAL ⁴			
	Total	Male	Female No. & PCT	Minorities 2 No. & PCT	Female	Minorities 2		
Executive	1074	352	722 (67.2)	77 (7.2)	675.0 (62.8)	153.1 (14.2)	17.4 (2.6)	77.9 (50.9)
Professional	1879	677	1202 (64.0)	197 (10.5)	1117.0 (59.4)	302.6 (16.1)	47.6 (4.3)	115.3 (38.1)
Clerical	2125	247	1878 (88.4)	236 (11.1)	1667.2 (78.4)	352.6 (16.6)	.0 (0)	117.6 (33.3)
Technical	1805	776	1029 (57.0)	202 (11.2)	971.9 (53.8)	301.6 (16.7)	9.0 (0.9)	102.6 (34.0)
Skilled Crafts	475	466	9 (1.9)	21 (4.4)	31.5 (6.6)	25.0 (5.3)	22.5 (71.4)	4.0 (16.0)
Service	950	671	279 (29.4)	168 (17.7)	309.1 (32.5)	255.7 (26.9)	57.5 (18.6)	91.1 (35.6)
Totals	8308	3189	5119 (61.6)	901 (10.8)	4772 (57.4)	1391 (16.7)	154 (3.2)	509 (36.6)

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required to maintain availability in the appropriate job groups. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE055-1 report (AAP, Appendix IV)

**Summary of Civil Service Workforce, Availability and Goals by Campus
Duluth**

Goal Year: 1998-99

EEO-6 JOB GROUP	EMPLOYEES 1		AVAILABILITY (PCT) 3		NUMBER TO GOAL ⁴			
	Total	Male	Female No. & PCT	Minorities 2 No. & PCT	Female	Minorities 2		
Executive	92	35	57 (62.0)	5 (5.4)	58.4 (63.4)	4.3 (4.7)	8.5 (14.5)	2.8 (65.1)
Professional	115	48	67 (58.3)	7 (6.1)	63.9 (55.6)	8.9 (7.7)	13.2 (20.6)	2.9 (13.9)
Clerical	220	6	214 (97.3)	7 (3.2)	200.7 (91.2)	11.8 (5.4)	.0 (0)	4.8 (40.7)
Technical	84	48	36 (42.9)	4 (4.8)	47.5 (56.5)	8.0 (9.5)	14.8 (31.2)	4.0 (50.0)
Skilled Crafts	40	40	0 (.0)	3 (7.5)	3.3 (8.2)	3.2 (8.0)	3.3 (100)	1.6 (50.0)
Service	126	82	44 (34.9)	10 (7.9)	42.3 (33.6)	20.1 (16.0)	3.3 (7.8)	11.4 (56.7)
Totals	677	259	418 (61.7)	36 (5.3)	416 (61.4)	56 (8.3)	43 (10.3)	28 (50.0)

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required to maintain availability in the appropriate job groups. This number may be less than or greater than number of total female employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE055-1 report (AAP, Appendix IV)

**Summary of Civil Service Workforce, Availability and Goals by Campus
Crookston
Goal Year: 1998-99**

EEO-6 JOB GROUP	EMPLOYEES 1		AVAILABILITY (PCT) 3		NUMBER TO GOAL ⁴			
	Total	Male	Female No. & PCT	Minorities 2 No. & PCT	Female	Minorities 2		
Executive	7	3	4 (57.1)	1 (14.3)	2.5 (35.7)	.1 (1.4)	1.0 (40.0)	.0 (0)
Professional	14	7	7 (50.0)	1 (7.1)	8.4 (60.0)	.2 (1.4)	2.5 (29.8)	.2 (100)
Clerical	27	2	25 (92.6)	0 (.0)	24.8 (91.8)	.9 (3.3)	1.0 (4.0)	.9 (100)
Technical	18	5	13 (72.2)	0 (.0)	11.7 (65.0)	1.0 (5.5)	.6 (5.1)	1.0 (100)
Skilled Crafts	13	13	0 (.0)	0 (.0)	.8 (9.6)	.2 (1.5)	.8 (100)	.2 (100)
Service	26	7	19 (73.1)	0 (.0)	12.9 (49.6)	1.6 (6.1)	.1 (0.8)	1.6 (100)
Totals	105	37	68 (64.8)	2 (1.9)	61 (58.1)	4 (3.8)	6 (9.8)	4 (100)

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required to maintain availability in the appropriate job groups. This number may be less than or greater than number of total female employees because under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

**Summary of Civil Service Workforce, Availability and Goals by Campus
Morris**

Goal Year: 1998-99

EEO-6 JOB GROUP	EMPLOYEES 1		Female		Minorities 2		AVAILABILITY (PCT) 3		NUMBER TO GOAL 4	
	Total	Male	No. & PCT	No. & PCT	No. & PCT	No. & PCT	Female	Minorities 2	Female	Minorities 2
Executive	14	2	12 (85.7)	0 (.0)	5.8 (41.4)	0 (0)	5.8 (41.4)	.2 (1.4)	.0 (0)	.2 (NA)
Professional	11	5	6 (54.5)	1 (9.1)	4.3 (39.1)	1 (9.1)	4.3 (39.1)	.0 (NA)	.7 (16.3)	.0 (NA)
Clerical	64	1	63 (98.4)	2 (3.1)	55.0 (85.9)	2 (3.1)	55.0 (85.9)	9.4 (14.7)	0 (NA)	7.4 (78.7)
Technical	18	10	8 (44.4)	1 (5.6)	5.9 (32.8)	1 (5.6)	5.9 (32.8)	.6 (3.3)	.3 (5.1)	.1 (NA)
Skilled Crafts	20	20	0 (.0)	0 (.0)	.8 (4.0)	0 (.0)	.8 (4.0)	.0 (0)	.8 (100)	.0 (0)
Service	52	25	27 (51.9)	3 (5.8)	23.7 (45.6)	3 (5.8)	23.7 (45.6)	3.0 (5.8)	3.0 (13.1)	1.7 (56.7)
Totals	179	63	116 (64.8)	7 (3.9)	96 (53.6)	7 (3.9)	96 (53.6)	13 (7.3)	6 (6.2)	9 (69.2)

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required to maintain availability in the appropriate job groups. This number may be less than or greater than number of total female or minority employees because under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE055-1 report (AAP, Appendix IV)

Summary of Faculty Workforce, Availability and Goals by Campus

**Total University
Goal Year: 1998-99**

FOC Code	Employees ¹ Total	Number/Pct Female	Minority ²	Availability (Pct) ³		Total Goals (No.) ³		No. To Goals ⁴		Pct. of Total Goals	
				Fem.	Min	Fem.	Min.	Fem.	Min.	Fem.	Min.
Faculty (Tenured)	2124	474 (22.3)	175 (8.2)	28.0	8.8	594	169	195	64	32.8	37.9
Faculty (Tenure Track)	422	190 (45.0)	66 (15.6)	33.9	12.8	143	54	30	29	21.0	53.7
Faculty (Nonregular)	906	300 (33.1)	78 (8.6)	30.0	13.7	272	124	73	76	26.8	61.3
Totals	3452	964 (27.9)	319 (9.2)	29.2	10.1	1009	347	298	169	29.5	48.7

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required to maintain availability in the appropriate job groups. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job groups. The percentage is the number of goals as a percent of total goals at availability. This number is related to the job groups where females or minorities are underrepresented.

Data Source: FCE014-1 report, (AAP, Appendix VII)

**Summary of Faculty Workforce, Availability and Goals by Campus
Minneapolis - St. Paul
Goal Year: 1998-99**

FOC Code	Employees ¹ Total	Number/Pct Female	Minority ²	Availability (Pct) ³		Goal ³		No. To Goals ⁴		Pct. of Total Goals	
				Fem.	Min	Fem.	Min.	Fem.	Min.	Fem.	Min.
Faculty 1823 (Tenured)	395	(21.6)	151 (8.2)	26.9	7.9	490	144	163	53	33.3	36.8
Faculty 346 (Tenure Track)	158	(45.6)	55 (15.8)	33.8	12.7	117	44	23	23	19.7	52.3
Faculty 702 (Nonregular)	199	(28.3)	63 (8.9)	27.8	14.7	195	103	60	64	30.8	62.1
Totals	2871	(26.1)	269 (9.3)	27.9	10.1	802	290	246	140	30.7	48.3

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required in the job group to maintain availability in the appropriate academic units. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE014-1 report, (AAP, Appendix VII)

Summary of Faculty Workforce, Availability and Goals by Campus
Duluth

Goal Year: 1998-99

FOC Code	Employees ¹ Total	Number/Pct Female	Minority ²	Availability (Pct) ³		Goal Fem.	Goal ³ Min.	No. To Goals ⁴		Pct. of Total Goals	
				Fem.	Min			Fem.	Min.	Fem.	Min.
Faculty 214 (Tenured)	58	(27.1)	17 (7.9)	36.0	8.4	77	18	23	8	29.9	44.4
Faculty 45 (Tenure Track)	13	(28.8)	7 (15.5)	31.1	13.3	14	6	7	5	50.0	83.3
Faculty 159 (Nonregular)	82	(51.5)	11 (6.9)	39.0	10.1	62	16	11	9	17.7	56.2
Totals	418	(36.6)	35 (8.3)	36.4	9.8	152	41	41	22	27.0	53.7

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required in the job group to maintain availability in the appropriate academic units. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE014-1 report, (AAP, Appendix VII)

**Summary of Faculty Workforce, Availability and Goals by Campus
Crookston
Goal Year: 1998-99**

FOC Code	Employees ¹ Total	Number/Pct Female	Minority ²	Availability (Pct) ³		Goal Fem.	Goal ³ Min.	No. To Goals ⁴		Pct. of Total Goals	
				Fem.	Min			Fem.	Min.	Fem.	Min.
Faculty 28 (Tenured)	7 (25.0)		0 (0.0)	21.4	7.1	6	2	2	2	33.3	100.0
Faculty 3 (Tenure Track)	2 (66.6)		1 (33.3)	20.0	10.0	0	0	0	0	0.0	0.0
Faculty 14 (Nonregular)	6 (42.8)		1 (7.1)	21.4	14.3	3	2	0	1	0	50.0
Totals	45	15 (33.3)	2 (4.4)	20.0	8.9	9	4	2	3	22.2	75.0

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required in the job group to maintain availability in the appropriate academic units. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE014-1 report, (AAP, Appendix VII)

**Summary of Faculty Workforce, Availability and Goals by Campus
Morris
Goal Year: 1998-99**

FOC Code	Employees ¹ Total	Number/Pct Female	Minority ²	Availability (Pct) ³		Goal Fem.	Goal ³ Min.	No. To Goals ⁴		Pct. of Total Goals	
				Fem.	Min			Fem.	Min.	Fem.	Min.
Faculty 59 (Tenured)		14 (23.7)	10 (16.9)	35.6	8.5	21	5	7	0	33.3	0
Faculty 28 (Tenure Track)		17 (60.7)	8 (28.6)	42.8	12.1	12	3	0	0	0	0
Faculty 30 (Nonregular)		13 (43.3)	5 (16.7)	40.0	13.3	12	4	1	0	8.3	0
Totals	117	44 (37.6)	23 (19.6)	37.6	10.2	44	12	8	0	18.2	0

¹Employees: EEO-6 Data Base, Full-Time and Part-Time Employees, October 1998.

²Minority: Black, Asian, American Indian, Hispanic (EEOC) Guidelines for EEO-6 reporting.

³Availability: The percentage (PCT) is compiled from federal Guidelines. The number (No.) identifies the number of female or minority employees required in the job group to maintain availability in the appropriate academic units. This number may be less than or greater than number of total female or minority employees because of under or over representation of them in some job groups within the FOC category.

⁴Number to Goal: This number identifies underutilization, the difference between the number of female or minorities employed and the number required in the job group. The percentage is the number of goals as a percent of total goals at availability. This number is related to job groups where females or minorities are underrepresented.

Data Source: FCE014-1 report, (AAP, Appendix VII)

VII. ANALYSIS AND IDENTIFICATION OF PROBLEM AREAS
41 CFR 60-2.13 (d)

The following report was presented to the University of Minnesota Board of Regents
on April 8, 1999.

PROFILES OF DIVERSITY

**Strategies for the Recruitment and Retention of a Diverse Workforce at the
University of Minnesota**

Carol A. Carrier, Vice President for Human Resources
Robert J. Jones, vice Provost
Nancy R. Barcelo, Associate Vice President for Multicultural Affairs
Julie A. Sweitzer, Acting Director, Equal Opportunity and Affirmative Action

Executive Summary

"The recruitment and retention of faculty (and staff) of color remains one of the most difficult challenges facing American higher education," (Turner, 1999)

The focus of this report is on how the University of Minnesota can continue to make progress in recruiting and retaining a strong and diverse workforce, that creates an environment that enhances excellence.

Conclusion and Challenges

There are few people of color among senior administrators and faculty, and they are unevenly distributed among units and across racial/ethnic groups. Women have made more progress, but not enough. The pipeline is a continuing concern. People with disabilities and of differing sexual orientations need to be included. Achieving the goal of continuing our progress requires integration of the concepts of diversity, equal opportunity and affirmative action into all levels of University decision-making.

National Context

Increasing the diversity of faculty and staff employed in higher education, including preventing and responding to discrimination, have been major topics of discussion across our country. In the last year the AACU's proceeded with its' initiative on American Commitments: Diversity, Democracy and Liberal Learning, and President Clinton's yearlong Initiative on Race concluded and spurred numerous campus "dialogues". The University of Minnesota presented a national conference in October 1998, entitled "Keeping Our Faculties: Addressing the Recruitment and Retention of Faculty of Color in Higher Education". At the same time affirmative action, one of the leading tools for increasing diversity, faced numerous high-profile legal challenges across the county. One positive outcome of the debate is that it has forced higher education to more clearly articulate the benefits of diversity in the workforce as well as in the student body, and encouraged research that could demonstrate the benefits.

University of Minnesota Context

The University of Minnesota's Mission Statement dedicates the University to "education for a diverse community", by preparing a "strong and diverse community of learners and teachers.... for active roles in a multiracial and multicultural world." Mission Statement, subds. 1 & 3. Specific efforts to increase the diversity of the workforce include:

Recruitment

President's Postdoctoral Fellowship for Academic Diversity
Faculty Bridge Fund Program
Visiting Scholars Program
Relocation Assistance
Golden Opportunities campaign
Media connections
Creating new networks
Increase access to job information
Speeding the process
Staff workshops

Retention and Development

Promotion and tenure
System-wide Faculty Development Program
President's Faculty Multicultural Research Award Program
Compensation /Benefits
Comprehensive preparation of supervisors/administrators
Internal job mobility
Employee recognition

Climate and environment

Compacts
Accessibility
Information sharing
Creative and flexible complaint handling
Support programs
Dialogues

Strategies for the Recruitment and Retention of a Diverse Workforce at the University of Minnesota

Carol A. Carrier, Vice President for Human Resources
Robert J. Jones, Vice Provost
Nancy R. Barcelo, Associate Vice President for Multicultural Affairs
Julie A. Sweitzer, Acting Director, Equal Opportunity and Affirmative Action

"The recruitment and retention of faculty [and staff] of color remains one of the most difficult challenges facing American higher education. Research findings- whether qualitative or quantitative, whether numerical or narrative- demonstrate that American Indian, African American, Latino, and Asian American faculty comprise, at most, 10% of the faculty, and many describe experiences of racial and ethnic bias in the workplace. Research findings suggest that there is a need to focus on changing the higher education workplace environment to further embrace the value of a racial and ethnically diverse professorate in order to sustain viability, vitality, and growth of our institutions in an ever changing social environment." (Turner, 1999)

INTRODUCTION

The focus of this report is on how the University of Minnesota can continue to make progress in recruiting and retaining a strong and diverse workforce, which creates an environment that enhances excellence. We will assess where we are, how we got to this point, and remaining concerns to be addressed as we move forward into the new millennium. Assuring equal opportunity is crucial but not enough, affirmative action is essential to creating a diverse workforce, and careful nurturing is required to maintain diversity. The following materials describe the national and local context, the specific challenges we have identified for the University of Minnesota, and recommendations for action.

National Context

Increasing the diversity of faculty and staff employed in higher education, and addressing the challenges that result from an increasingly diverse workforce, including preventing and responding to discrimination, have been major topics of discussion across our country. Over the last year alone the American Association of Colleges and Universities cosponsored with PBS a national teleconference on "Racial Legacies and Learning: How to Talk about Race", part of AACU's initiative on American Commitments: Diversity, Democracy and Liberal Learning. President Clinton's yearlong Initiative on Race concluded with a written report last fall and spurred numerous campus "dialogues", including the week-long event held last October on the University of Minnesota Twin Cities campus. The United States Department of Education held a series of regional conferences on "College Admissions and Affirmative Action", which also addressed employment. Numerous national seminars and conferences studied related issues, with perhaps the most comprehensive national symposium being presented by the University of Minnesota in October 1998, entitled "Keeping Our Faculties: Addressing the Recruitment and Retention of Faculty of Color in Higher Education", which will be discussed in more detail within.

At the same time affirmative action, one of the leading tools for increasing diversity, faced numerous high-profile legal challenges across the country, most prominently in Texas, California, Michigan and Washington. Much of the related debate encouraged misinformation about affirmative action. The American Council on Education issued a statement in February 1999 condemning the threat of litigation as a tool to curtail the rights of colleges, and widely published its policy statement "On the Importance of Diversity in Higher Education." One positive outcome of the debate is that it has forced higher education to more clearly articulate the benefits of diversity in the workforce as well as in the student body, and encouraged research that could demonstrate the benefits.

Other recent activity includes many institutions such as Penn State and UC-Berkeley that have developed broad plans and strategies, and provided models for other institutions. The Midwestern Higher Education Commission's (MHEC) Minority Faculty Development Project (May 1995) suggested qualified faculty of color candidates are underrepresented because of a drop-off at almost every stage along the educational pipeline from secondary school to completion of a doctorate, and many institutions are taking steps with the long-term goal of broadening the pool. Finally, the tightening labor market has focused attention on successful recruiting and retention strategies for all employees.

University of Minnesota Context

The University of Minnesota has historically been committed to "keeping our faculty" as reflected in its commitment of resources and the establishment of innovative programs dedicated to recruiting and retaining a diverse faculty. Indeed the commitment goes as deep as the Mission Statement passed by the Board of Regents in 1994, which dedicates

the University to "education for a diverse community", by preparing a "strong and diverse community of learners and teachers.... for active roles in a multiracial and multicultural world." Mission Statement, subds. 1 & 3. "In all of its activities, the University strives to sustain an open exchanges of ideas in an environment ... that provides an atmosphere of mutual respect, free from racism, sexism, and other forms of prejudice and intolerance:... that is conscious of and responsive to the needs of the many communities it is committed to serving." Mission Statement, subd. 5.

The Regents' amplified the intent by adopting the "Diversity, Equal Employment Opportunity and Affirmative Action" policy in September 1995, committing the University "to achieving excellence through diversity." Diversity, subd. 1. "The University shall seek to: (1) provide equal access and opportunity... (2) advocate and practice affirmative action...(3) establish and nurture an environment that actively acknowledges and values diversity and is free from racism, sexism, and other forms of prejudice, intolerance or harassment... and (4) provide equal education access to members of under-represented groups." Diversity, subd. 2. Finally, and perhaps most importantly, administrative officers were directed to set goals consistent with the policy and the law. Diversity, subd. 4.

In the implementation of these policies the University works from the premise that "keeping a diverse faculty and staff" is transformative and changes the way an institution responds to its community and constituencies through policies, programs, and practices. Our strategic plans incorporate the principles identified at the national symposium on "Keeping Our Faculties". The over 300 attendees from 36 states across the country reflected a broad spectrum of faculty, administrators and institutions. Those principles and practices, adjusted to include all employees, are:

- Incorporate diversity as a core value.
- Stress the importance of commitment from all levels of the institution.
- Broaden definitions of scholarship and restructure the reward system.
- Support administrative and faculty development.
- Institutional accountability (we all fail when faculty are not promoted or good employees leave).
- Support research that examines the work experiences of a diverse faculty.
- Review hiring processes to insure fair practices.
- Replicate "grow your own" models.
- Conduct interviews with former employees, and use their feedback to assess and improve the campus climate.
- Promote networking among faculty and employees of color.
- Incorporate the Mission Statement and Diversity Policy as support for the value of diversity within our educational and employment settings.

Diversity includes more than race and ethnicity, although much of the recent national attention has focused on race. The inclusion of women and people with disabilities, as well as people with different sexual orientations, continue to be issues that rightfully demand attention. Overall, approximately 10% of our faculty are people of color, as are over 10% of our civil service/bargaining unit workforce, but the percentage drops to approximately 8% of the academic professional and administrative workforce, and 7% of our executive administrators. Women represent just over half of our total workforce, but only approximately 40% of our executive and administrative academic staff, while they are over 60% of the civil service/bargaining unit employees. As the attached exhibits demonstrate, it is crucial to look within the overall picture to identify where, and of whom, there is underrepresentation.

How do we continue to make progress in recruiting and retaining a strong and diverse workforce, which creates an environment that enhances excellence?

Challenges

Recruitment, development and retention are and must remain a priority of the University of Minnesota. We have made steady progress but there are still areas in which we must redouble our efforts. Areas to strengthen include:

- There are few people of color (particularly Asians, Chicano-Latinos, and American Indians) among senior administrators across campus, not just centrally but including senior academic positions such as dean and associate dean. Women have made more progress into these positions, but not enough.
- While all colleges identify at least one faculty member of color, African-American, Chicano-Latino and American Indian faculty are missing from many colleges. Again, women are present in greater numbers, but still are unevenly distributed.
- The availability of a diverse qualified group who are interested in moving into academia or administration – the pipeline, as it is euphemistically known – is a continuing concern.
- People with disabilities and of differing sexual orientations are often invisible in our diversity discussions, but are an important part of the diversity that is our mission.
- A strong and diverse workforce is essential for the success of the University's undergraduate initiative.

Recommendations

The Office of the Executive Vice President and Provost, Human Resources, Multicultural Affairs and Equal Opportunity and Affirmative Action are actively involved in developing and implementing the following programs in order to address the challenges set forth above.

Recruitment

Specific efforts to increase the diversity of the faculty include:

President's Postdoctoral Fellowship for Academic Diversity:

The purpose of this program is to enhance the number of faculty from underrepresented populations with the requisite credentials to be strong candidates for assistant professorships at the University of Minnesota. This program provides up to three postdoctoral fellowships per year. One of the five fellows to date received a tenure-track appointment at the University of Minnesota, and three are in the second year of the program.

Faculty Bridge Fund Program:

Established in 1988, this program provides funding assistance to departments with high needs and a genuine commitment to hiring faculty of color.

Visiting Scholars Program:

The aim of this initiative is to provide faculty development opportunities to faculty from other institutions, and build short-term diversity in the faculty of some of our academic units, while simultaneously building relationship that will foster our efforts to recruit students and faculty of color.

Other efforts to recruit a diverse academic and staff workforce include:

Relocation Assistance:

The Relocation Assistance Program provides much needed support for individuals looking to move to the Twin Cities campus. A variety of services, including assistance in locating neighborhoods, school systems, employment for spouses and partners are provided during the interview process and once new employees arrive in town. One aspect of this program provides a special service to people of color who want to become more familiar with opportunities and communities in the Twin Cities community of particular interest to them.

Golden Opportunities campaign:

The low unemployment rates in Minnesota have led to a highly competitive market for attracting applicants, especially in certain fields such as technology. To make the University more visible and attractive to all applicants, Human Resources instituted a "Golden Opportunities" advertising campaign to explain the process of applying for positions, and assist applicants in presenting their qualifications in an effective manner. Over the past three years, more than 14 job fairs were held in urban communities of color and attracted more than 5000 job seekers. The percentage of people of color hired into our civil service/bargaining unit workforce has increased from 6.1% in 1995-96 to 7.2% in 1997-98.

Media connections:

A formal partnership with McFarlane Media began in March 1999 to increase the University's visibility in our Minnesota communities of color. Image ads will appear in 11 ethnic media publications and on radio programs from the end of March into June 1999. Additional ads will feature numerous current job openings, rather than the single job ad approach.

Creating new networks:

For example, President Yudof met with civic and faith community leaders to use these networks to locate job seekers. We also partnered with a local private business training school to provide 25 internships to date, which have resulted in several job placements at the University, for participants in welfare reform programs.

Increase access to job information:

All University jobs are now posted on the web, and are also available via the telephone on Jobsline. Individuals with applications on file can apply for positions by phone, avoiding a trip to campus.

Speeding the process:

Both university departments and applicants benefit by reducing the time it takes to hire a staff employee. Over the past year we have reduced the time to hire each staff employee from 18% to 27%, depending on the employee group.

Staff workshops:

The Office of Equal Opportunity and Affirmative Action holds semi-annual workshops for unit equal opportunity officers and employees with human resources duties. A recent session focused on recruiting sources and methods. Monthly informal lunch discussions and an email network provide opportunities to share information and ideas more frequently. In addition statistical information and new recruiting leads are distributed more widely to senior administrative officers and collegiate units, and to unit equal opportunity officers. These efforts are focused on eliminating the "I don't know how or where to recruit for diversity" responses.

Retention and Development

Professional development and retention of high quality faculty and staff is just as important if we are to maintain our progress. We have been able to maintain average turnover rates for staff employees at a relatively stable rate of about 11% per year for the past few years. Faculty turnover was 6.7% for fiscal year 1998, including departures due to resignation, retirement, notices of termination, terminal leave agreements, or death. The attrition rate for women faculty was 5.1%, and for faculty of color it was 6.5%, indicating we are doing reasonably well in retaining all of our faculty.

Faculty programs include:

Promotion and tenure:

Helping individuals succeed in their early years is a key to the retention of faculty. During their first six years, probationary faculty must demonstrate their productivity to reach standards set by the university and their units for promotion and tenure. Efforts to support faculty through this process include: formal preparation of department chairs/heads to provide feedback and guidance to their probationary faculty; an annual dinner and discussion for probationary faculty women is held to provide practical, timely advice from university officials on how to best prepare for the tenure review process; and a special seminar series for minority faculty provides a relaxed atmosphere in which similar questions can be raised and discussed.

System-wide Faculty Development Program:

The first element of this program is an orientation program for new faculty, which provides information about University expectations of junior faculty, and faculty enrichment opportunities such as summer research grants. An orientation program also provides new faculty the opportunity to meet other faculty, both new and returning, for purposes of creating community and/or connecting with individuals across the disciplines for eventual collaborative work. The second element consists of workshops and seminars offered throughout the year which address topics on tenure, writing research grants, working in collaboration with faculty, how to write for publications, enhancing teaching skills, networking, mentoring, and promotion.

President's Faculty Multicultural Research Award Program:

This program was initiated during the 1994-95 academic year to encourage and support research by faculty of color and to promote research on issues related to people of color. A major goal of the award is to enhance the retention of diverse faculty members while increasing the research literature available on issues related to diversity. For junior faculty these awards serve as an important avenue to launch research by providing seed money. The results of these research projects are presented to the entire University community in a symposium. The presentation of the research serves to raise the awareness of the broader University community on multicultural issues, thereby contributing strategies to improve the campus climate and enhance the University's pursuit of excellence.

Programs affecting all staff include:

Compensation /Benefits:

Our goal is to ensure competitive salary and benefits packages. Market surveys of compensation in the public and private sectors provide benchmarks. For faculty, the market is the top 30 research institutions. For staff groups, if market discrepancies are identified for particular job families, we provide special increase parameters through the pay plan each year. Increasingly units are beginning to use bonus or incentive plans to reward productivity. For example, staff in the printing unit have received incentive pay for the past few years because profit targets were reached.

Comprehensive preparation of supervisors/administrators:

Immediate supervisors play an extremely key role in an employee's level of satisfaction and therefore productivity. Competent and fair supervision is one of the most effective tools to avoid discrimination, or the perception of it. Better preparation and coaching of these key individuals is a priority for a cross-functional team of central offices that together now deliver training on effective human resource practices. As of 1999, supervisors are encouraged to attend a half-day session within a month of assuming a supervisory role. We hope to soon expand this program which currently emphasizes key policies and avoiding discriminatory behaviors. More extensive programs such as an effective supervision course of 24 hours, a year-long program on administrative excellence, and the new Presidential Leadership Development initiative combine to improve leadership, management and supervision within the institutions.

Internal job mobility:

Our newly redesigned search procedures allow qualified staff to be moved into different positions within the University without searches, with approval of the Vice President for Human Resources and the Director of Equal Opportunity. As of mid-March, 20 employees of color received new job opportunities through the new procedures, as well as 32 employees identified as white. Twenty-seven (27) of these employees were women. Staff employees hoping to enhance their skills or consider other job possibilities within the university can attend sessions with the Employee Career Enrichment Program or sign up for training offered by many other units within the university. Especially significant is the massive training program now underway to prepare faculty and staff for the implementation of the new Enterprise Systems.

Employee recognition:

Currently more than 100 programs, most based in departments, are used to recognize employee accomplishments. Employee recognition is an important tool for productivity and moral building, and we will assure that it is included in training offerings for all supervisors and managers.

Climate and environment

Compacts:

The compacts collegiate and many administrative units develop each year with the assistance and approval of the Executive Vice President and Provost include a section regarding efforts to increase and retain the diversity of the unit. This year we enhanced the compact process to include discussion of the representation within the workforce. Attention is also paid to use of professional development programs and other related efforts to retain a diverse staff and improve the work environment. Vice presidents and deans have been advised to include responses to inquiries regarding workforce diversity and development programs in performance evaluations and goal setting in their units.

Accessibility:

The world of computer technology is developing faster than accessible technology can keep pace. We have gathered information technology experts from across the University to learn how to create systems that are accessible for persons with visual and physical disabilities without costly post-development accommodations. Guidelines for University development will help assure a smooth surf across the web, and complement our ongoing efforts to assure accessibility in new buildings and gradually improve access to our older facilities.

Information sharing:

In November/December 1998 all employees received a copy of the new Equal Opportunity and Affirmative Action brochure which included copies of relevant University policies, information about types of discrimination, the AA complaint procedures, and listings of other resources. New employees receive copies when they attend orientation, and distributions will continue annually.

Creative and flexible complaint handling:

An employee with a concern about discrimination needs a safe place to discuss options. Each situation is unique. The discrimination problems we face are increasingly complex and ingrained in societal institutions, and a diverse workforce must trust that the University has a method for handling the inevitable disputes, and a process that recognizes each and every perspective. An employee who can not find a place to have discrimination concerns addressed in a way that does more than place a bandage on the surface will leave and potentially do more harm to the University's recruiting, development and retention efforts than we can ever fix. The Office of Equal Opportunity and Affirmative Action is using flexible and innovative methods to respond to the concerns raised by employees.

Support programs:

The Gay, Lesbian, Bisexual and Transgender Program Office, Disability Services, and the new Office for University Women are significant resources for employees to obtain needed information and assistance, and for the University to learn about the issues we must address.

Dialogues:

Yes, we are talking to each other, and listening. Beginning with the student initiated Dialogue on Race in October 1998, which actively supported by both Multicultural Affairs and the Office of Equal Opportunity and Affirmative Action, we have continued to create settings where administrators and staff can discuss issues of race and privilege. We are expanding opportunities for these respectful considerations of each other's perspectives to all of the campuses, and look forward to these challenging encounters. In addition, we are actively involved in developing a national teleconference on women in higher education in the new millennium entitled "Women's Lives, Women's Voices, Women's Solutions," scheduled for March 2000.

Conclusion

Achieving the goal of continuing our progress requires integration of the concepts of diversity, equal opportunity and affirmative action into all levels of University decision-making. The commitments so eloquently and clearly set forth in the Mission Statement and the Diversity, Equal Employment Opportunity and Affirmative Action policy are meaningless without aggressive and affirmative actions, and accountability. We are engaged in a process, not production of a finite product, but we are confident that the result will be excellence in all corners of the University of Minnesota.

(End of Regents' report)

Employment Seniority:

Employment seniority by position classification, department or University can affect an employee's ability to apply for posted positions ahead of non-university employees or ahead of other employees for bargaining unit positions. Seniority related to transfers and promotions is included above.

Employment seniority by position classification, department or University can affect an employee's ability to bump into a formerly held position, bump another employee, or apply for posted positions ahead of non-university employees or ahead of other employees for either bargaining or non-bargaining unit positions from layoff. Employees whose positions are lost through layoff and bumping are included with voluntary and involuntary terminations.

Apprenticeship/Training Programs:

The University participates in apprenticeship training in the skilled crafts, who represent just under 4 percent of the total non-student workforce. On average, 5 apprentices work at the University at any time and these are referred by the union hiring halls.

Technical Phases of Compliance:

The "EEOC Law" poster, Minnesota State "Contractor, NON-DISCRIMINATION... is the law" poster and University Equal Opportunity and Non-Discrimination Policy are posted on all employment boards on each campus. The posters and job postings are now protected by glass doors to prevent theft and mutilation.

The application form has been amended to delete dates from education and degree awarded to avoid possible age discrimination. This was done at the suggestion of the State Department of Human Rights. Applications are kept on file for a minimum of three years.

Employment Seniority:

Faculty hires, promotions, terminations and non-reappointments are not based on seniority. Current employees and other applicants may apply for any position for which they are qualified.

Apprenticeship and Training Programs:

Apprenticeship and training programs do not apply to non-student faculty appointments.

Technical Phases of Compliance:

All departments and search committees are informed of equal opportunity policy, advertising and record-keeping requirements in the Guidelines for Academic Searches, July 1998.

Employment Seniority:

Academic and administrative hires, promotions, terminations and non-reappointments are not based on seniority. Current employees and other applicants may apply for any position.

Apprenticeship and Training Programs:

Apprenticeship and training programs do not apply to non-student faculty appointments.

Technical Phases of Compliance:

All departments and search committees are informed of equal opportunity policy, advertising and record-keeping requirements in the Guidelines for Academic Searches, July 1998.

Company Facilities and Programs

The University's Policy of Equal Opportunity and Non-Discrimination applies to education, employment, contractors/vendors and the use of all facilities.

During orientation, new students and graduate Teaching Assistants are informed about the policy and harassment guidelines. Student organizations using campus facilities are required to sign an assurance of compliance with the policy.

Employers and recruiters wishing to use campus facilities and Placement Services must sign an assurance of compliance with the policy, developed and implemented in 1976. The assurance form was amended in 1989 to prohibit discrimination on the basis of veteran status, handicap and sexual orientation. The form was also amended to prohibit discrimination on the basis of creed, marital status and with respect to public assistance status. Each school, college and campus with Placement Services was asked to report on compliance each year.

Contractors and vendors are informed of the policy in all purchase orders, regardless of dollar amount, and in bid specifications for awards of \$10,000 or more. In the latter case, an affirmative action program or certificate of compliance from the State is required. The purchase order form and bid specifications have been amended to include discrimination on the basis of creed, marital status and with respect to public assistance.

Workforce Environment

In 1998 the University of Minnesota built on its history of improving the work and learning climate for women by establishing the Office for University Women. In recent decades the Minnesota Plan II and the Commission on Women developed many programs to provide support and leadership training for University women. The Office for University Women serves faculty, staff and students and broadly consulted through focus groups and a transition committee to design services to better serve women in today's climate.

The Office for Multicultural Affairs has responsibility for program development regarding recruiting and retaining faculty and staff of color. Other programs focus on women, people with disabilities and gay/lesbian staff and students and specific offices serve these constituencies. The Office coordinates many programs focused on developing the pool of qualified students and applicants for university employment. More information on these programs is available at their website at <http://www.aamd.umn.edu>.

To address the climate for disabled employees, the Office of Equal Opportunity and Affirmative Action surveyed all employees in 1992 to identify concerns and special problems, including accommodations. The director works with the Office of Disability Services, and the Office for Multicultural Affairs to address individual accommodations needs and identify broader issues in the community.

In the student living and learning environment, the University implemented the following:

- Disseminated policies and reporting procedures information through CD-Roms provided to all incoming students, and student-focused web sites.
- Provided training for housing staff annually, as well as for new students, students in dormitories, students in the Greek System and athletics.

Sexual harassment, assault and violence are also addressed by the University's policy on sexual harassment. Students and employees may file a complaint with the Office of Equal Opportunity and Affirmative Action. Training and counseling are provided by that office or by the Sexual Violence Program staff. The sexual harassment policy was revised and strengthened, and was adopted by the Regents in December 1998. The policy was distributed to employees and students by the Office of Equal Opportunity and Affirmative Action through the deans and vice presidents. Training related to the sexual harassment policy and the Nepotism and Consensual Relations policy was provided to equal opportunity officers in December 1998 and January 1999. Several colleges also provided training to department heads and administrators.

Summary of Academic P/A Hires, Availability, and Progress to Goals
Total University
Goal Year: 1997-98

FOC Code	Hires' Total	Percent of Total Hires	Availability ² Percent	Progress to Meet Goals by EEO-6/Job Group		
				Job Groups With Goals	Job Groups With Hires	No./Pct. Hires To Meet Goals
Executive/ Administrative	26	26.9 7.7	39.5 12.2	1	1	1 (100.0)
				2	2	2 (100.0)
Administrative Faculty	15	20.0 13.3	27.7 7.9	1	1	1
				0	1	NA
P/A Nonfaculty	1204	52.1 15.6	45.7 13.7	5	5	5 (100.0)
				11	11	8 (80.0)
Totals (Exec. and P/A Nonfaculty)	1245	51.2 15.4	45.4 13.6	7	7	7 (100.0)
				13	14	10 (71.4)

Data Source: Form 17 Activity, Offers, 11/23/98, AAP, 1998, Appendix VIII

Summary of Civil Service Hires, Availability, and Progress to Goals by Campus
Total University
Goal Year: 1997-98

FOC Code	Hires' Total	Female Minority	Percent of Total Hires	Availability ² Percent	Progress to Meet Goals by EEO-6/Job Group		
					Job Groups With Goals	Job Groups With Hires	No./Pct. Hires To Meet Goals
Executive	191	Female Minority	67.0 4.2	55.7 10.2	12 5	2 4	2 (100.0) 2 (50.0)
Professional	602	Female Minority	49.5 6.6	54.3 13.2	10 10	6 10	4 (66.7) 6 (60.0)
Clerical	713	Female Minority	69.7 5.8	85.9 11.0	0 9	NA 8	NA 5 (62.5)
Technical	428	Female Minority	52.1 6.3	58.7 13.3	11 12	6 10	4 (66.7) 3 (30.0)
Skilled Crafts	7	Female Minority	0.0 0.0	4.5 6.4	7 3	2 1	0 (0.0) 0 (0.0)
Service	320	Female Minority	35.0 14.4	27.7 15.1	13 11	6 10	5 (83.3) 4 (40.0)
Totals	2261	Female Minority	55.6 7.2	56.6 11.8	56 50	22 43	15 (68.2) 20 (46.5)

Data Source:

1. FCE077 Reports, 11/1/97 - 10/31/98, 11/4/98
2. AAP 1998, Appendix IV

Minority: Includes Asian, American Indian, Black, and Hispanic

**Summary of Civil Service Hires, Availability, and Progress to Goals by Campus
Minneapolis - St. Paul
Goal Year: 1997-98**

FOC Code	Hires' Total	Female Minority	Percent of Total Hires	Availability' Percent	Progress to Meet Goals by EEO-6/Job Group		
					Job Groups With Goals	Job Groups With Hires	No./Pct. Hires To Meet Goals
Executive	188	Female Minority	67.0 4.3	55.6 10.8	6 4	2 3	2 (100.0) 2 (66.7)
Professional	577	Female Minority	50.1 6.8	54.3 13.6	5 7	4 7	4 (100.0) 6 (85.7)
Clerical	654	Female Minority	85.6 6.0	85.6 11.8	0 3	NA 3	NA 3 (100.0)
Technical	412	Female Minority	52.7 6.0	58.1 14.1	5 10	3 8	3 (100.0) 3 (37.5)
4 Skilled Crafts	7	Female Minority	0.0 0.0	4.3 7.0	4 3	2 1	0 (0.0) 0 (0.0)
Service	303	Female Minority	36.6 14.2	26.2 16.9	7 6	6 6	5 (83.3) 3 (50.0)
Totals	2141	Female Minority	56.0 7.3	58.1 12.8	27 33	17 28	14 (82.4) 17 (60.7)

Data Source:

1. FCE077 Reports, 11/1/97 - 10/31/98, 11/4/98

2. AAP 1998, Appendix IV

Minority: Includes Asian, American Indian, Black, and Hispanic

**Summary of Civil Service Hires, Availability, and Progress to Goals by Campus
Duluth
Goal Year: 1997-98**

FOC Code	Hires' Total	Percent of Total Hires	Availability ² Percent	Progress to Meet Goals by EEO-6/Job Group		
				Job Groups With Goals	Job Groups With Hires	No./Pct. Hires To Meet Goals
Executive	2	100	50.0	5	0	0 (0.0)
	Female Minority	0	0.0	1	1	0 (0.0)
Professional	19	36.8	55.6	5	2	0 (0.0)
	Female Minority	1	7.9	3	3	0 (0.0)
Clerical	44	77.3	88.3	0	NA	NA
	Female Minority	1	4.9	3	2	1 (50.0)
Technical	13	38.5	56.5	3	2	1 (50.0)
	Female Minority	0	6.5	1	1	0 (0.0)
Skilled Crafts	0	0.0	6.3	1	0	0 (0.0)
	Female Minority	0	2.8	0	NA	NA
Service	7	14.3	27.8	3	0	0 (0.0)
	Female Minority	3	9.6	3	2	1 (50.0)
Totals	85	56.5	58.7	17	4	1 (25.0)
	Female Minority	5	6.4	11	9	2 (22.2)

Data Source:

1. FCE077 Reports, 11/1/97 - 10/31/98, 11/4/98
2. AAP 1998, Appendix IV

Minority: Includes Asian, American Indian, Black, and Hispanic

**Summary of Civil Service Hires, Availability, and Progress to Goals by Campus
Crookston
Goal Year: 1997-98**

FOC Code	Hires' Total	Percent of Total Hires	Availability ² Percent	Progress to Meet Goals by EEO-6/Job Group		
				Job Groups With Goals	Job Groups With Hires	No./Pct. Hires To Meet Goals
Executive	1	100.0	38.3	1	0	NA
	Female Minority	0	1.7	0	NA	NA
Professional	2	0.0	53.3	1	0	0 (0.0)
	Female Minority	0	10.0	0	NA	NA
Clerical	3	33.3	91.7	0	NA	NA
	Female Minority	0	3.3	1	1	0 (0.0)
Technical	2	0.0	58.1	3	1	0 (0.0)
	Female Minority	0	5.0	1	1	0 (0.0)
Skilled Crafts	0	0.0	7.3	1	0	NA
	Female Minority	0	1.8	0	NA	NA
Service	4	0.0	39.6	1	0	NA
	Female Minority	0	6.4	2	2	0 (0.0)
Totals	12	16.7	53.9	7	1	0 (0.0)
	Female Minority	0	5.0	4	4	0 (0.0)

Data Source:

1. FCE077 Reports, 11/1/97 - 10/31/98, 11/4/98

2. AAP 1998, Appendix IV

Minority: Includes Asian, American Indian, Black, and Hispanic

**Summary of Civil Service Hires, Availability, and Progress to Goals by Campus
Morris
Goal Year: 1997-98**

FOC Code	Hires' Total	Percent of Total Hires	Availability' Percent	Progress to Meet Goals by EEO-6/Job Group		
				Job Groups With Goals	Job Groups With Hires	No./Pct. Hires To Meet Goals
Executive	0	0.0	42.7	0	NA	NA
		0.0	2.0	0	NA	NA
Professional	4	50.0	37.0	1	0	NA
		0.0	0.0	0	NA	NA
Clerical	12	41.7	85.5	0	NA	NA
		8.3	5.3	2	2	1 (50.0)
Technical	1	100	36.4	0	NA	NA
		0.0	0.9	0	NA	NA
Skilled Crafts	0	0.0	3.7	1	0	NA
		0.0	0.0	0	NA	NA
Service	6	0.0	44.2	2	0	NA
		0.0	4.7	0	NA	NA
Totals	23	34.8	53.2	4	0	NA
		4.3	3.6	2	2	1 (50.0)

Data Source:

1. FCE077 Reports, 11/1/97 - 10/31/98, 11/4/98

2. AAP 1998, Appendix IV

Minority: Includes Asian, American Indian, Black, and Hispanic

Summary of Faculty Hires, Availability, and Progress to Goals by Campus
Campus: Total University
Goal Year: 1997-98

FOC Code	Hires Total	Female Minority	Percent of Total Hires	Availability Percent	Departments			No./Pct. Hires To Meet Goals
					Total With Goals	Total With Hires	Total	
Faculty (Tenured)	54	Female Minority	25.9 14.8	29.8 8.4	98 65	20 13	6 4	(30.0) (30.8)
Faculty (Tenure Track)	222	Female Minority	40.1 23.4	35.9 13.5	26 26	15 15	4 8	(26.7) (53.3)
Faculty (Nonregular)	279	Female Minority	42.6 16.3	31.1 14.5	50 37	26 26	15 12	(57.7) (46.2)
Totals	555	Female Minority	36.2 19.3	30.8 10.4	174 128	61 54	25 24	(41.0) (44.4)

Data Source: AAP 1998, Appendix VII and Form 17 Offers, 11/1/97 - 10/31/98, 11/23/98

Summary of Faculty Hires, Availability, and Progress to Goals by Campus
Campus: Minneapolis - St. Paul
Goal Year: 1997-98

FOC Code	Hires Total	Female Minority	Percent of Total Hires	Availability Percent	Departments			No./Pct. Hires To Meet Goals
					Total With Goals	Total With Hires	Total	
Faculty (Tenured)	53	14	26.4 15.1	28.9 8.4	78 49	20 13	6 4	(30.0) (30.8)
Faculty (Tenure Track)	192	79 45	41.1 23.4	36.2 13.8	18 24	12 15	4 8	(33.3) (53.3)
Faculty (Nonregular)	207	63 35	30.4 16.9	31.7 15.9	41 25	23 18	13 9	(56.5) (50.0)
Totals	452	156 88	34.5 19.5	30.3 10.7	137 98	55 46	23 21	(41.8) (45.7)

Data Source: AAP 1998, Appendix VII and Form 17 Offers, 11/1/97 - 10/31/98, 11/23/98

Summary of Faculty Hires, Availability, and Progress to Goals by Campus
Campus: Duluth
Goal Year: 1997-98

FOC Code	Hires Total	Female Minority	Percent of Total Hires	Availability Percent	Departments		
					Total With Goals	Total With Hires	No./Pct. Hires To Meet Goals
Faculty (Tenured)	1	Female Minority	0.0 0.0	36.9 8.7	16 13	0 0	0 (0.0) 0 (0.0)
Faculty (Tenure Track)	15	Female Minority	20.0 26.7	32.5 13.3	8 2	3 0	0 (0.0) 0 (0.0)
Faculty (Nonregular)	49	Female Minority	55.1 6.1	31.1 8.7	7 8	2 6	1 (50.0) 2 (33.3)
Totals	65	Female Minority	46.2 10.8	34.8 9.1	31 23	5 6	1 (20.0) 2 (33.3)

Data Source: AAP 1998, Appendix VII and Form 17 Offers, 11/1/97 - 10/31/98, 11/23/98

Summary of Faculty Hires, Availability, and Progress to Goals by Campus
Campus: Crookston
Goal Year: 1997-98

FOC Code	Hires Total	Female Minority	Percent of Total Hires	Availability Percent	Departments		
					Total With Goals	Total With Hires	No./Pct. Hires To Meet Goals
Faculty (Tenured)	0	Female Minority	0.0	20.0	1	0	NA
			0.0	6.9	3	0	NA
Faculty (Tenure Track)	4	Female Minority	50.0	20.0	0	NA	NA
			25.0	10.0	0	NA	NA
Faculty (Nonregular)	1	Female Minority	0.0	22.5	1	0	0 (0.0)
			0.0	11.7	2	0	NA
Totals	5	Female Minority	40.0	21.4	2	0	NA
			20.0	8.3	5	0	NA

Data Source: AAP 1998, Appendix VII and Form 17 Offers, 11/1/97 - 10/31/98, 11/23/98

Summary of Faculty Hires, Availability, and Progress to Goals by Campus
Campus: Morris
Goal Year: 1997-98

FOC Code	Hires Total	Female Minority	Percent of Total Hires	Availability Percent	Departments			No./Pct. Hires To Meet Goals
					Total With Goals	Total With Hires	Total	
Faculty (Tenured)	0	Female Minority	0.0 0.0	36.6 8.4	3 0	0 0	0 0	NA NA
Faculty (Tenure Track)	11	Female Minority	45.5 18.2	41.0 12.3	0 0	NA NA	NA NA	NA NA
Faculty (Nonregular)	22	Female Minority	36.4 40.9	37.2 12.8	1 2	1 2	1 1	1 (100.0) 1 (50.0)
Totals	33	Female Minority	39.4 33.3	38.1 10.4	4 2	1 2	1 1	1 (100.0) 1 (50.0)

Data Source: AAP 1998, Appendix VII and Form 17 Offers, 11/1/97 - 10/31/98, 11/23/98

VIII. ESTABLISHMENT OF GOALS AND OBJECTIVES BY
ADMINISTRATIVE UNIT AND JOB GROUP
41 CFR 60-2.13(e)

Civil Service Employment

Goals for females and minorities have been set by school, college, and administrative unit, Volume IV, where underutilization of 0.5 or more exists in job group by campus.

Faculty Employment

Goals for women and minorities have been set by department and college, Appendix VII, where underutilized by 0.5 or more in job group. The goals will be monitored as described in Section IX. The Associate Vice President for Multicultural Affairs addresses the problem of recruitment and retention of students and faculty of color.

The Office of Equal Opportunity and Affirmative Action Office and the Office of the Vice President for Human Resources have revised the Guidelines for Academic Searches. The new guidelines are focusing the accountability and decision making authority on the deans and administrative unit heads. The Office of Equal Opportunity and Affirmative Action and Human Resources will retain responsibility for providing training for unit officers regarding the equal opportunity and affirmative action responsibilities, and for monitoring the results of the university's hiring actions. The revisions were reviewed with the President's Minority Advisory Councils, the Commission on Women, faculty and staff governance groups, Deans, Unit Equal Opportunity Officers and other administrators. The two offices will be reviewing the experiences under the new guidelines this summer.

Academic Professional and Administrative (P/A) Staff

Goals For Women and Minorities, Appendix VIII, are identified where underutilized by 0.5 or more by job group. Underutilization is not identified by department or administrative unit because the number of employees within the units is not sufficient to warrant meaningful analysis or realistic goals. The goals are monitored with the Form 17 for the total University as positions become available within a department as described in Section IX.

IX. DEVELOPMENT AND EXECUTION OF PROGRAMS
41 CFR 60-2.13(f)

Civil Service Employment

Underutilization and goals for women and minorities by administrative unit, Volume IV, are distributed to the various schools, colleges and other units quarterly.

When job requisitions are submitted to Human Resources' staff, they will review the appropriate goals report for the administrative unit to determine if females or minorities are underutilized in the job group related to the job requisition.

Human Resources developed a specialized recruitment program utilizing a minority media coalition in early 1999. A new recruiter makes special efforts to recruit and refer qualified women, minorities and disabled individuals. Contracts were arranged with a placement firm and temporary agency specializing in hiring people of color.

All recruitment and advertising will include the equal opportunity and non-discrimination policy.

The Office of Human Resources works with various community organizations and newspapers in recruiting women, people of color, disabled individuals and veterans.

University Human Resources participates in job fairs and sponsors information on the application process at the University and at various agencies which serve women, minorities, the disabled, and veterans.

Position announcements are linked to State Employment Offices on the World Wide Web. Application information and postings are available by phone on Jobs Line and City Line.

The Office of Human Resources and the Office of Equal Opportunity and Affirmative Action have developed information packets which includes an overview, history, benefits, and employment procedures, along with the equal opportunity and affirmative action policy.

Faculty Employment

Underutilization and goals for women and minorities by tenure status within parent department, Appendix VII, are distributed to each college annually.

Proposed searches for all academic positions, including faculty, must be documented on the Form 16 with consultation by the Unit Equal Opportunity Officers and Human Resources.

Search committees must review departmental workforce, availability, goals, and approved selection criteria. They are also required to make good faith efforts to recruit and consider qualified women, minorities, disabled individuals and Vietnam Era veterans.

Faculty and senior administrative positions are required to conduct national searches. Equal Opportunity Officers must be consulted. Academic positions that are not subject to searches must be approved by the Equal Opportunity Officer and/or the Vice President for Human Resources prior to extending an offer.

Good faith efforts to recruit and hire qualified women, minorities, disabled individuals and Vietnam Era veterans must be documented. For positions subject to national searches, departments are required to use national publications, associations and other efforts to locate qualified applicants, including women, minority, disabled individuals and veterans.

In addition to those efforts, the Office of Human Resources provides a listing of available academic positions, available on Gopher and the World Wide Web. Over 300 agencies, associations and individuals, including State Employment Offices and agencies serving women, minority, disabled individuals and veterans were notified of the listings that may be accessed electronically on Gopher and the World Wide Web.

Academic Administrative and Professional (P/A) Employment

Underutilization and goals for women and minorities for the total University by job group, Appendix VIII, are distributed to each college, administrative unit and campus annually. These goals are also monitored with the Forms 16 and 17 as noted except that workforce, availability and goals are for the total University by job group.

Searches for all academic positions must be documented on the Form 16 and approved by Academic Affairs.

Search committees must review departmental workforce, availability, goals and approved selection criteria. They are also required to make good faith efforts to recruit and consider qualified women, minorities, disabled individuals and Vietnam Era veterans.

Good faith efforts to recruit and hire qualified women, minorities, disabled individuals and Vietnam Era veterans must be documented.

X. INTERNAL AUDIT AND REPORTING SYSTEM
41 CFR 60-2.13(g)

Total Workforce Data Reports

Academic and Civil Service employment workforce data are maintained centrally on the Integrated Postsecondary Education Data System (IPEDS) database.

Reports are generated biannually from the April 15 and October 31 payrolls in three basic formats: IPEDS report format, job classification, and department, school, college, and administrative unit. Additionally, these data are provided by race and sex.

The IPEDS report is identified as the CO49 report and contains campus and total University employment data by salary interval and total University employment data by salary interval within FOC category in the following areas:

- Full-time Staff, 9 - 10 Month Contracts
- Full-time Staff, Faculty With Less Than 9 - 10 Month Contracts
- Full-time Staff, 11 - 12 Month Contracts
- Full-time Staff, Person With Academic Rank and/or Tenure
- Full-time Staff, Paid in Full from "Soft Money" Sources
- Full-time Staff, Total All Foreign Nationals
- Full-time Faculty by Rank and Tenure
- Part-time Staff
- New Hires

These data are provided in the following EEO-6 categories:

- Executive/Administrative/Managerial
- Faculty
- Professional Non-Faculty
- Secretarial/Clerical
- Technical/Paraprofessional
- Skilled Crafts
- Service/Maintenance

Academic employment workforce is found in only the first three categories while the Civil Service employment workforce is found in all but the faculty category.

Total University employment workforce data by job classification/rank within EEO-6 category is provided in the CO45-4 reports containing the Civil Service and Academic workforce, respectively. In addition to summary data by race, sex, job classification/rank, and EEO-6 category, the following detail information is also maintained by employer:

- Employee name
- Social security number
- Vice president/administrative code
- Fund number
- Department number

- Parent department number
- Job classification/rank title
- Date of birth
- Sex and ethnic code
- Education code
- U.S.A. citizen/resident status code
- Class entry mode (hire, promotion, etc.)
- Disability code (Y or N)
- Veteran Code (1,2,3 or 4)
- Starting date of current job classification/rank
- Starting date at the University
- Payroll code
- Appointment term/tenure status/percent time
- Full-time/part-time code
- Monthly salary

Employment workforce data by department is provided in the CO45-1 and CO45-3 reports containing the Civil Service and Academic workforce, respectively. These reports contain detailed information similar to that contained in the aforementioned CO45-2 and CO45-4 reports.

In addition to containing detail information at the department level, these reports also contain summary workforce data by race and sex at the level of department, school, college, administrative unit, campus, except for the Twin Cities Campus which is sorted by Vice President and total University. Unfortunately, these workforce summary totals do not provide any summary totals by job classification/rank or EEO-6 category.

Academic and Civil Service workforce from the EEO-6 data base is used to perform the workforce analysis by department. However, because of the confidential nature of some of these data on the current CO45 reports, special reports are provided to the departments for the workforce analysis. The CO45 reports are available to authorized department and University personnel for use in the Office of Equal Opportunity and Affirmative Action.

Appropriate workforce sections of the CO49 and CO45 reports are provided biannually to the Offices of Human Resources and Equal Opportunity and Affirmative Action.

Academic Workforce Data Reports

Data is gathered from Form 17s, which provides a Summary of the Affirmative Action Process Assuring Equal Employment Opportunity in Academic Appointments, and must be submitted centrally to the Office of Human Resources. Certain administrative appointments must be approved by the Board of Regents. Each proposed appointment must have an approved search and selection process that has been documented with the results of the search and selection process. Documentation in the committee files must include the pool of applicants, those seriously considered, and the individual selected, by race, sex, disability and veteran status. Reasons for non-selection of each candidate considered are also documented.

Civil Service Workforce Data Reports

Biennially, workforce is reviewed by the Office of Equal Opportunity and Affirmative Action when it prepares the semi-annual compliance reports to the Minnesota State Department of Human Rights (SDHR). Data from the April and October IPEDS report is used to prepare the "Minority Employment Report" which provides a yearly comparison of the total University workforce. The impact of new hires, promotions, transfers, and reclassifications are reflected on the CO49 and CO45 reports under "class entry" mode.

Individual Civil Service hire activity is monitored by the Offices of Human Resources and Equal Opportunity and Affirmative Action and documented on President Form 18, Monitoring Form for Civil Service Positions Designated for Affirmative Action.

Upon the availability of new or vacant positions, University departments must submit the Civil Service Personnel Requisition, (a job requisition) to the Personnel Office that is responsible for the following:

- Ensure that the job requirements and duties are valid job related criteria and appropriate for the job classification.
- Post the job description and recruit an adequate pool of applicants to include qualified women and minorities.
- Certify applicants to ensure that they meet the minimum qualification.
- Refer applicants meeting at least minimum qualifications to the departments.
- Ensure that the person selected by the department has been properly certified and referred by the Personnel Office.

Data collected by the Office of Human Resources and documented on the Civil Service Applicant Tracking System include the following:

- Job requisition number
- Date posted
- Date closed
- Job classification number and title
- Department (number and title)
- Date applicant applied
- Name of applicant
- Social Security number of applicant
- Status of applicant by code

F=Former employee

P=Present employee

NA=New applicant

UN=Unknown

C=Civil Service employee

A=Academic
S=Student employee

- Disability Code
- Accommodation Request
- Veteran Code
- Interviews by code, identifies person who interviewed the applicant
- Referral status
- Individual(s) hired
- Transfer, promotion status

University good faith efforts to recruit, seriously consider, and hire qualified women and minorities are monitored and documented. The number of applicants referred, number of applicants interviewed, and the name of each minority and female candidate referred by personnel must also be documented. Also, departments are to review their goals.

Annual Report to University Community

Annually, the Office of Equal Opportunity and Affirmative Action reviews the total University workforce, both Academic and Civil Service, and presents a report to the President and to the Board of Regents at one of their monthly meetings. This report on the status of equal opportunity and affirmative action at the University is then published in a report that is made available to every department and to faculty, staff and to the public upon request.

These data are compiled from the October payroll reports of the CO49, Higher Education Staff Information (EEO-6), and the CO45 reports which contain Academic Civil Service workforce by job classification/rank. This annual report provides summary data for total University workforce expansion/contraction by race and sex within EEO-6 category.

The personnel employment activity including hires, promotions, transfer, reclassifications, and terminations is reflected in the annual reports as a net gain or loss in the workforce. These data are available on the FCE007 report, EEO Yearly Workforce Summary Report. Applicants, referrals, interviews, and hires data are also available on a separate report generated for the civil service applicant tracking system.

X. INTERNAL AUDIT AND REPORTING SYSTEM
41 CFR 60-2.13(g)

External Reporting

The Integrated Postsecondary Education Data System (IPEDS) report is filed biennially with the federal government.

The Federal Contractor Veterans Employment Report (VETS-100), is filed annually with the U.S. Department of Labor, Office of Veterans Employment and Training.

The Semiannual Compliance Reports are filed with the State Department of Human Rights.

XI. COMPLIANCE WITH SEX DISCRIMINATION GUIDELINES
41 CFR 60-2.13(h)

The University has implemented the requirements of Title IX of the Educational Amendments of 1972, including a self-evaluation during 1986. All schools and colleges were required to update their written sex-neutral criteria and evaluation procedures for:

- hiring
- salary review and adjustment;
- contract renewal; and
- granting of tenure and promotions

In November 1998, the brochure and letter from the President was distributed to every employee (Refer to Exhibit D). It is available on-line, and is distributed to all new employees during orientation and during other training programs.

A policy statement on Sexual Harassment was approved by the University Senate on May 17, 1984. A new Sexual Harassment Policy was adopted by the Board of Regents in December 1998. The policy development process also included adoption of a consensual relations policy to help avoid future problems and claims.

In 1985-86, all classes of students and employees on all campuses were surveyed on their experiences with sexual harassment. Recommendations arising from this survey included formation of a Program Against Sexual Violence, which provides extensive training for students each year regarding sexual violence and assists victims.

The Office of Equal Opportunity and Affirmative Action provides training for supervisors, administrators and managers on handling sexual harassment complaints. A packet of sexual harassment materials was developed for this purpose, although the training materials are being revised, (Appendix IX). Many activities are outlined in the publication "Guide to Improving the Campus Climate for Women," (Appendix IX).

XII. SUPPORT OF COMMUNITY ACTION PROGRAMS
41 CFR 60-2.13(i)

The University of Minnesota participates with the following organizations, primarily coordinated through the Office of Equal Opportunity and Affirmative Action and the Office of the Vice President for Multicultural Affairs:

President's Minority Advisory Committees:

- African-American
- American Indian
- Chicano-Latino
- Asian-Pacific

Urban League

NAACP

Urban Coalition

American Association for Affirmative Action

Minnesota State Affirmative Action Association

Minnesota Minority Lawyers Association

Intergovernmental Compliance Institute

Labor Education Apprenticeship Program Advisor Committee

National Association of Women in Education

National Association of College and University Attorneys

National Association of Minority Contractors

National Association for Women in Education

National Forum for Black Public Administrators

Horizon 100

CIC, Affirmative Action Panel (Big Ten Institutions, The University of Chicago, and Penn State University)

Minnesota Economic Development Association

Woman Venture

XIII. CONSIDERATION OF WOMEN AND MINORITIES NOT CURRENTLY IN THE WORKFORCE

Part-time academic and civil service positions are available to people who cannot find full-time work: part-time academic positions are also monitored through positions and are also covered by equal opportunity and affirmative action policy.

Temporary S.O.S. positions are also available through the Civil Service Personnel Office. These positions are also available to people who cannot find regular employment. Then, too, some people prefer to work on a temporary basis.

Regents' scholarships are available for civil service employees so that they can attend classes and thereby prepare for job improvement or career changes from one segment of the workforce to another.

The Counseling Office in Nolte Center is available to assist students and non-students in making decisions about education for careers in the workforce.

The Women's Center assists people in counseling and in awarding stipends toward an education. They also concentrate in assisting adult women who are returning to education and to the workforce.

XIV. GRIEVANCE PROCEDURE

The Office of Equal Opportunity and Affirmative Action is responsible for investigating complaints of discrimination covered by its equal opportunity policy:

The University of Minnesota is committed to the policy that all persons shall have equal access to its program, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Complaints of discrimination may be resolved without using formal University grievance procedures. The Office of Equal Opportunity and Affirmative Action will assist faculty, staff, students and other individuals primarily through informal channels. A person who feels that they have been discriminated against in education, employment or use of facilities on the basis of illegal discrimination may use the office. The process involves the following basic steps:

- A person who feels that he/she may have been discriminated against will meet with a staff member to discuss the specific incident(s). The person will be informed of options including the office consultation procedure and other University grievance processes.
- A determination is made on whether the complaint warrants investigation and whether the alleged discrimination is covered by the equal opportunity policy and affirmative action programs. The person may be asked to complete a complaint form.
- If a complaint is accepted and a determination is made that the University Equal Opportunity Policy was violated, a remedy to the problem will be offered.
- If a determination is made that the University Equal Opportunity Policy was not violated, the person is informed, and other options are explained.

Individuals are encouraged to exhaust all internal remedies and alternatives in making a "good faith" effort to reach an amicable resolution to a complaint. Each person must select the option most appropriate to the situation.

Individuals must also realize that most internal and external grievance procedures have strict time limits within which complaints must be initiated. A brochure, updated in 1998, with an explanation of the grievance procedure is available from the Office, Appendix IX.

**AFFIRMATIVE ACTION PROGRAM
FOR THE DISABLED
(41CFR60-741)
and
(Minnesota Statutes, Section 363.073)**

**AFFIRMATIVE ACTION PROGRAM
FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA
(41CFR60-250)**

**The University of Minnesota
1999**

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363, by the Federal Civil Rights Act, 420 S.C. 2000e; by the requirements of Title IX of the Education Amendments of 1972; by Sections 503 and 504 of the Rehabilitation Act of 1973; by the American With Disabilities Act of 1990; by Executive Order 11246, as amended; 38 U.S.C. 2012, the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity.

Inquiries regarding compliance may be directed to Julie Sweitzer, Director, at the address below.

This material is available in alternative formats upon request. Please contact Marilyn Trettel at the following address:

Office of Equal Opportunity and Affirmation Action, 419 Morrill Hall, 100 Church Street S.E., University of Minnesota, Minneapolis, MN 55455, (612)624-9547, Fax (612)624-5223, TDD (612)626-8947.

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I. Introduction

As a federal and state contractor, the University is required to provide equal employment opportunities for qualified persons with a physical or mental disability and to eliminate employment discrimination based on a physical or mental disability, pursuant to Section 503 of the "Rehabilitation Act Amendments of 1974" (P.L. 93-516) and Section 363.073 Minnesota Statutes, Certificates of Compliance for Public Contracts.

As a federal contractor, the University is required to provide equal employment opportunities for qualified disabled veterans and veterans of the Vietnam Era and to eliminate employment discrimination because an individual is a disabled veteran or veteran of the Vietnam Era, pursuant to the "Vietnam Era Veterans' Readjustment Assistance Act of 1972" (P.L. 92-540) as amended by the "Vietnam Era Veterans Readjustment Assistance Act of 1974" (P.L. 93-508).

II. Equal Opportunity and Affirmative Action Policy

The University of Minnesota shall not discriminate against any employee or applicant for employment because of physical or mental disability or because a person is a disabled veteran or Vietnam Era veteran in regard to any position for which the employee is qualified. The University of Minnesota agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled individuals, disabled veterans and Vietnam Era veterans without discrimination based upon their physical or mental disability in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The University of Minnesota agrees to comply with the rules and relevant orders of the Minnesota Department of Human Rights, the Secretary of Labor issued pursuant to the Rehabilitation Act of 1973, as amended, and the Vietnam Era Veterans' Readjustment Assistance Act.

The University of Minnesota agrees to post in conspicuous places available to employees and applicants for employment, notices in a form to be prescribed by the Commissioner of the Minnesota Human Rights and by the Director of the Office of Federal Contract Compliance Programs (OFCCP) provided by or through the contracting officer. Such notices shall state the University of Minnesota's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants for employment, and the rights of applicants and employees. The University of Minnesota shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the contractor is bound by the terms of Minnesota Statutes, Section 363.073 of the Minnesota Human Rights Act, Section 503 of the Rehabilitation Act of 1973 and the Vietnam Era Veterans' Readjustment Act and is committed to take affirmative action to employ and advance physically and mentally disabled individuals, disabled veterans and Vietnam Era veterans.

III. The Personnel Process

The Office of Human Resources has the responsibility of reviewing the personnel process to assure proper consideration of the job qualifications of employees and applicants who are disabled, disabled veterans and Vietnam Era veterans.

A. Review of Essential Qualifications.

Prior to the posting of an academic or civil service position, Human Resources will review each job requisition to ensure that all physical and mental job qualification requirements are job-related and consistent with business necessity and the safe performance of the job. No position can be advertised or filled until the job requisition has been reviewed and approved by these offices.

B. Pre-Employment Medical Examination.

The University may require a medical examination after an offer of employment. The results of the examination will not be used to screen out qualified disabled individuals. Information obtained in response to such inquiries or examination shall be kept confidential except that (a) supervisors and managers may be informed regarding accommodations, (b) first aid and safety personnel may be informed, where and to the extent appropriate, if the condition might require emergency treatment, and (c) government officials investigating compliance with the Act shall be informed if they request such information.

C. Reasonable Accommodations.

Current employees and new applicants for academic and civil service positions will have the opportunity to identify by race, sex, disability, and veteran status. The Employment Accommodations unit of Disability Services will work with each employee or applicant who requests an accommodation.

Medical information on applicants/employees with a disability will be maintained by Disability Services.

D. Recruitment.

To ensure that qualified individuals with disabilities are informed of the University's non-discrimination policy, the State Department of Economic Security, Minnesota State Services for the Blind, and other agencies known to train and/or refer disabled individuals and veterans will be informed of current University policies, programs and available employment openings.

IV. Dissemination of the Policy

The University will inform current employees, applicants, and the public of its affirmative action policy and program through postings, publications, workshops and through the news media.

A. Postings.

Public notices regarding the law and University policy and program will be posted in University employment offices, placement office and other appropriate areas.

B. Publications.

The policy will be included in appropriate University publications, including the Brief, and The Minnesota Daily.

C. Distribution of the Policy and Program.

A brochure to explain the Equal Opportunity Policy and Program is distributed to all new employees. It is available to all interested individuals on request.

D. Workshops and Seminars.

To foster an understanding of the legal requirements of the law and sensitivity in the administration of the spirit of the law, the Office of Equal Opportunity and Affirmative Action and Disability Services will coordinate and/or sponsor periodic workshops and seminars for appropriate University personnel.

V. Responsibility for Implementation

A. The Director and University Equal Opportunity Officer for the University of Minnesota.

Responsibilities include the monitoring of all equal opportunity and affirmative action activities, evaluating their effectiveness and recommending appropriate action to ensure their objectives.

B. Unit Equal Opportunity Officers.

The University has designated a Collegiate/Unit Equal Opportunity Officer for each school, college and administrative unit, including the coordinate campuses, to assist the University Equal Opportunity Officer in monitoring these activities within their respective areas.

C. Search Committees.

The University Equal Opportunity Officer or the Collegiate/Unit Equal Opportunity Officer meets with search committees to review the posting, recruitment and selection process for academic positions. Additionally, searches for administrators must ensure that the proposed candidate is aware of and committed to equal opportunity and affirmative action policies.

D. Self-Identification Procedure.

Current employees and new applicants for academic and civil service employment will have the opportunity to identify by race, sex, disability and veteran status. Disability Services will work with each applicant with a disability who requests an accommodation.

Supervisors and managers may be informed of necessary accommodations.

E. Monitoring of the Program.

Information on the disabled, disabled veterans and Vietnam Era veterans is collected and maintained by the Offices of Human Resources and Equal Opportunity and Affirmative Action.

- (1) In academic employment, the Form 24, "Applicant Tracking Record for Academic Employment," is sent to applicants for academic non-student positions which are 75 percent time or more. The search committee and hiring official are responsible for giving serious consideration to applicants who identify by name for consideration under an affirmative action program.

Reasons for the the non-selection of disabled applicants, disabled veterans and Vietnam Era veterans must be retained in the search committee files. An applicant may review his or her individual file and request information about selection criteria and reasons for non-selection.

Upon completion of the search process, and before an offer can be extended to any candidate, the Form 17 and attachments must be submitted for consultation with the Collegiate/Unit Equal Opportunity and by Human Resources. Each Form 24 returned by an applicant must be attached with the Form 17. The applicant pool information by race, sex, disability and veteran status is collected from the Form 17. Summary reports of applicants by race, sex, disability and veteran status are reviewed annually by EEO-6 category/job group and used for reporting.

- (2) The Office of Human Resources collect information by race, sex, disability and veteran status from applicants for each posting. Applicants may identify on the application by race, sex, disability and veteran status for consideration under an affirmative action program.

Applications of qualified applicants are referred to the hiring official who has the responsibility for giving serious consideration to persons with a disability, disabled veterans and Vietnam Era veterans who identify by name.

The Disability Services Employment Unit consults with disabled applicants who request an accommodation. The determination about when this information is applicable or appropriate to a specific posting is based on the duties and the nature of the accommodation requested.

To close a position, the hiring official must complete the referral follow-up form and document reasons for non-selection of the disabled, disabled veterans and Vietnam Era veterans.

The Office of Human Resources collects and maintains the information on applications, referrals, interviews, hires, and reasons for non-selection by race, sex, disability and veteran status. Applicants may request to see their personnel file and information related to their application and non-selection.

Summary reports of applicants, referrals, interviews and hires are reviewed annually by the Office of Equal Opportunity and Affirmative Action for compliance with state and federal regulations and reporting.

VI. Contractor and Vendors

"Each agency and each contractor and subcontractor shall include the following affirmative action clause in each of its covered government contracts or subcontracts (and modifications, renewals, or extensions thereof if not included in the original contract)."

A. Affirmative Action for Handicapped Workers.

In order to ensure that University contractors, subcontractors and vendors are equal opportunity employers, all contracts, subcontracts, and purchase orders for not less than \$10,000 shall certify to the Affirmative Action Clause from Title 41, CFR, Chapter 60, Part 741.5(a).

B. Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era.

In order to ensure that University contractors, subcontractors and vendors are equal opportunity employers, all contracts, subcontracts, and purchase orders for not less than \$10,000 shall certify to the Affirmative Action Clause from Title 41, CFR, Chapter 60, Part 250.5

VII. Policy Guidelines

A. Persons with a disability.

The Rehabilitation Act of 1973, as amended, defines a "handicapped individual" for the purpose of the program as any person who:

- (1) Has a physical or mental impairment which substantially limits one or more of such person's major life activities;
- (2) Has a record of such impairments, or;
- (3) Is regarded as having such impairment.

B. Life Activities.

"Life activities" may be considered to include communication, ambulation, self-care, socialization, education, vocational training, employment, transportation, adapting to housing, etc. For the purpose of Section 503 of the Act, primary attention is given to those life activities that affect employability.

C. Substantially Limited.

For the purposes of this program, a person with a disability is "substantially limited" if he or she is likely to experience difficulty in securing, retaining or advancing in employment because of the degree to which the disability affects employability.

D. Qualified Handicapped Individual.

A "qualified handicapped individual" means a person with a disability who is capable of performing the essential functions of a particular job with a reasonable accommodation.

E. Has a Record of Such an Impairment.

An individual who may be completely recovered from a previous physical or mental disability is included because the attitude of employers, supervisors, and co-workers toward that previous disability may result in discrimination. This includes

the mentally restored and those who have had heart attacks or cancer. Also, this part of the definition includes individuals who may have been erroneously classified as mentally retarded or mentally restored.

F. Is Regarded as Having Such An Impairment.

This refers to those individuals who are perceived as having a disability, whether a disability exists or not, but who, because of attitudes or for any other reason, are regarded as disabled by employers, or supervisors who have an effect on the individual securing, retaining or advancing in employment.

G. Veteran of the Vietnam Era.

Means a person who (A) served on active duty for a period of more than 180 days and was discharged or released therefrom with other than a dishonorable discharge, if any part of such active duty occurred: (i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or (ii) Between August 5, 1964 and May 7, 1975, in all cases: or
(B) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed: (i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or (ii) Between August 5, 1964 and May 7, 1975, in all cases.

H. Special Disabled Veteran.

(A) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability: (i) Rated at 30 Percent or more; or (ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap; or
(B) A person who was discharged or released from active duty because of a service-connected disability.

I. Qualified Disabled Veteran.

Means a disabled veteran as previously defined who is capable of performing a particular job with reasonable accommodation to his or her disability.

VIII. Grievance Procedure

The Office of Equal Opportunity and Affirmative Action is responsible for investigating complaints of discrimination covered by equal opportunity policy and affirmative action programs.

Complaints of discrimination may be resolved without using formal University grievance procedures. The office will assist faculty, staff, students and other individuals primarily through informal channels. Persons who feel that they have been discriminated against in education, employment or use of facilities on the basis of illegal discrimination, specific discrimination covered by the equal opportunity policy and affirmative action programs, may use the office. The process involves the following basic steps.

- A. A person who feels that he or she has been discriminated against will meet with a staff member to discuss the specific incident(s). The person will be informed of the options including the office consultation procedure and other University Grievance processes.
- B. A determination is made on whether the complaint warrants investigation and whether the alleged discrimination is covered by the equal opportunity policy and affirmative action programs. The person may be asked to complete a complaint form.
- C. If a complaint is accepted and a determination is made that the University Equal Opportunity Policy was violated, a remedy to the problem will be offered.
- D. If a determination is made that the University Equal Opportunity Policy was not violated, the person is informed, and other options are explained.

Individuals are encouraged to exhaust all internal remedies and alternatives in making a "good faith" effort to reach an amicable resolution to a complaint. Each person must select the option most appropriate to the situation.

Individuals must also realize that most internal and external grievance procedures have strict time limits within which complaints must be initiated. A brochure with an explanation of the grievance procedure is available from the office.

Inquiries regarding grievance mechanisms may be directed to:

The Director and University Equal Opportunity Officer, Office of Equal Opportunity & Affirmative Action, University of Minnesota, 419 Morrill Hall, 100 Church Street S.E., Minneapolis, MN 55455

University of Minnesota
Academic Employment, Total University
October 1997

EEO-6 Category	Total	Male	Female	Disabled		Vietnam Veteran		Disabled Veteran		Other	
				Male	Female	Male	Female	Male	Female	Male	Female
Executive	173	102	71	0	2	6	0	0	0	0	0
Faculty	3,452	2,488	964	13	3	82	2	1	0	7	0
Professional Non-Faculty	3,284	1,594	1,690	14	16	70	1	1	0	3	1
Clerical	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technical/ Para-Profes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Skilled Craft	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Service/ Mainten	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Totals	6,909	4,184	2,725	27	21	158	3	2	0	10	1

Data Source: CO45-4, 11/9/98

University of Minnesota
Civil Service Employment, Total University
October 1997

EEO-6 Category	Total	Male		Female		Vietnam Veteran		Disabled Veteran		Other Veteran	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Executive	1,187	392	795	6	10	26	3	3	0	1	0
Faculty	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Professional Non-Faculty	2,020	737	1,283	10	14	48	3	4	0	1	0
Clerical	2,441	257	2,184	5	23	13	7	0	0	1	1
Technical/ Para-Profes	1,961	849	1,112	16	8	64	3	2	0	2	1
Skilled Craft	548	539	9	5	0	79	1	2	0	3	0
Service/ Mainten	1,157	787	370	21	5	63	0	3	0	7	0
Totals	9,314	3,561	5,753	63	60	295	17	14	0	15	2

Data Source: C045-2, 11/9/98

Appendix 3

**Guidelines for Proposals for
Rapid Response Funds**



UNIVERSITY OF MINNESOTA

Minnesota Agricultural Experiment Station
June 1999

Rapid Agricultural Response Fund

Description/Background

The 1998 legislative appropriation to the University of Minnesota designated one-time funding for a *Rapid Response Fund*. The 1999 legislative appropriation designates a *Rapid Agricultural Response Fund*. The creation of this recurring fund provides a means for the University of Minnesota to initiate or accelerate problem-solving or opportunity research, and associated extension programs, to support and sustain Minnesota's agricultural industry. These funds are intended for immediate response to short- and intermediate-term current and emerging agricultural issues. Although there is no set guideline for minimum or maximum grants, it is the intent to fund significant, comprehensive proposals, rather than small, individual proposals. Current Rapid Response Fund projects range up to \$315,000.

The Rapid Agricultural Response Fund is held in the Minnesota Agricultural Experiment Station (MAES) and is administered by the MAES. These funds are restricted to project expenses, including hiring of project-specific short- or intermediate-term personnel, and are not intended for long-term, recurring commitments for faculty and staff. The overall concept is to accelerate or fund projects on a non-recurring basis for a specific time frame to retain flexibility for future issues.

Fund Management Principles

The fund will be managed and allocated according to five principles:

1. The fund will provide a readily accessible source of support for faculty to accelerate research, and

associated extension programs, to support Minnesota's agricultural industry.

2. Project funds are non-recurring and intended for short- and intermediate-term (one to three years) responses to current and emerging agricultural concerns, and to enhance existing research/extension capacity.
3. Funds will be limited to *project expenses*. Regular faculty salaries and other long-term commitments will not be covered, although project-specific personnel for the short or intermediate term would be permitted (post-doctoral researchers, research assistants, etc.).
4. Identification and clarification of issues and development of response proposals will involve appropriate external stakeholders.
5. The fund will be managed to maintain maximum flexibility for future issues.

Funding

One million dollars is available annually for the Rapid Agricultural Response Fund.

Proposal Review/Selection Process

The Rapid Agricultural Response Fund Administrative Council (comprising the Dean, College of Agricultural, Food, and Environmental Sciences, and Director, Minnesota Agricultural Experiment Station; Dean and Director, University of Minnesota Extension Service; and a representative of the University's Office of Government Relations) is responsible for managing the process of allocating funds to selected proposals.

Multi-disciplinary proposals that demonstrate interactive teams of research and extension faculty are encouraged. Proposals may be submitted by one or more faculty from one or more colleges, departments, research and outreach centers, or extension field offices. Faculty members are expected to work with external groups/organizations to develop proposals.

Funded projects will be reported on the Minnesota Impacts data base, as well as the Grants Management System.

A Rapid Agricultural Response Fund project manager and an oversight committee will provide the fund's administrative council with recommendations based on proposals:

- being within the University's research mission;
- being consistent with the above stated Rapid Agricultural Response Fund management principles;
- being relevant to real, emerging, compelling agricultural issues for the citizens of the state;
- having potential for the work to *be effective* as a short- or intermediate-term response; and
- having a relevant extension education component.

Timelines

Proposals can be submitted for review by the fund's Administrative Council after September 1, 1999. Approvals and allocations are subject to the availability of funds.

Format for Proposals

A four-page (maximum length) proposal must follow this outline:

- **Project Leader** (telephone, fax number, e-mail address and surface mail address);
- **Title of Project;**
- **Overview** (precise statement of the problem);
- **Project Work Plan** (including timeline);
- **Project Justification** (expected or anticipated outcomes, likelihood for success, and consistency with the fund's management principles);
- **Relevant Current Support;**
- **Documentation of External Input in Project Development;**
- **Project Team Members and Roles** (a brief paragraph on each).

Attach a budget sheet, a two-page vitae for each team member, and letters of support.

Both paper and electronic copies of a proposal must be sent to project manager Fred Bergsrud at the Minnesota Agricultural Experiment Station, 190 Coffey Hall, 1420 Eckles Avenue, Saint Paul MN 55108.

More Information?

Questions and requests for more information should be directed to project manager Fred Bergsrud at 612-625-3104, or bergs003@tc.umn.edu via e-mail.

Produced in the Educational Technology and Communications Services unit of the University of Minnesota Extension Service.

The information given in this publication is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the University of Minnesota or the Minnesota Agricultural Experiment Station is implied.

The University, including the Minnesota Agricultural Experiment Station, is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Appendix 4
Reviewer Forms for AES Projects

PROJECT PROPOSAL REVIEW SUMMARY
MINNESOTA AGRICULTURAL EXPERIMENT STATION

(Check one)

Project Title _____ Project No. _____

(See Guidelines for Review of Research Project Proposals for Instruction)

Careful examination of a project proposal and descriptive comments must be made if a review is to be useful.

Please indicate your recommendation for each component of the proposal and comment on your professional appraisal of the following aspects of the proposal. Please return completed review by _____ to _____ (date)

 (department head)

Use additional sheet for items you wish to discuss in greater detail.

No changes recommended
 Minor changes recommended
 Major changes recommended
 Cannot comment

1. Is the title appropriate to the description of the project?

COMMENTS:

--	--	--	--

2. Definition of the project and justification of scientific merit.

COMMENTS:

--	--	--	--

3. Practical significance and importance of contributions expected from the project. **COMMENTS:**

--	--	--	--

4. Are the objectives clearly stated, self-defined? Are there objectives that should be deleted or added? **COMMENTS:**

--	--	--	--

5. Are the sources of potentially productive cooperation adequately defined? If not, suggest individuals and/or agencies who might make significant contributions to the project.

6. Other comments or critiques:

7. Please complete the following:

___ Reviewer has had contact with project investigator

___ Reviewer has made suggestions for change or modification to the project leader

___ Reviewer has had discussion with the project leader

___ Reviewer wishes to maintain anonymity of this review

Signature _____

Date _____

Appendix 5

Compacts:

**College of Agricultural, Food, and
Environmental Sciences**

College of Biological Sciences

College of Natural Resources

DRAFT MAY 18, 1999

Compact for the College of Agricultural, Food, and Environmental Sciences

FY 1999-2000

Introduction:

The College of Agricultural, Food, and Environmental Sciences encompasses responsibilities for research, education, and outreach related to the production and use of biological materials for society's needs, and related to the interactions of these products and processes with people and the environment. More explicitly, the mission is to provide responsible leadership in the generation and application of research-based knowledge, to the use of our natural and human resources for the production, distribution, and consumption of food, fiber and renewable energy, and for the betterment of our natural and human environments -- all with technologies that address needs and concerns of a diverse constituency.

In total, COAFES supports 245 faculty, 435 support staff and 175 professional academic staff. The College enrolls 920 undergraduates and 358 graduate students. The college's research and outreach missions are supported in part by the Minnesota Agricultural Experiment Station (MAES) and the University of Minnesota Extension Service (Extension). Most faculty and many support staff have joint appointments with the MAES and Extension.

Reflecting its land grant roots, the College's tripartite mission is supported on a recurring basis by University O&M funds, state special and federal formula funds, as well as grants and gifts. State and federal funds are provided by cooperative agreements in support of research and outreach in agriculture. The College administers and supports extensive off-campus research facilities, including Research and Outreach Centers throughout the state, the University of Minnesota Landscape Arboretum, and several cooperative sites around the state. Globally, the faculty have an enviable record of program development and interactions in many developing countries.

The College of Agricultural, Food, and Environmental Sciences consists of twenty-one budgeted areas (see list below).

COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES (COAFES)

APPLIED ECONOMICS
AGRONOMY & PLANT GENETICS
ANIMAL SCIENCE
BIOSYSTEMS AND AGRICULTURAL ENGINEERING

ENTOMOLOGY
FOOD SCIENCE & NUTRITION
HORTICULTURAL SCIENCE
PLANT BIOLOGY
PLANT PATHOLOGY
RHETORIC
SOIL, WATER, & CLIMATE
AGR/FOOD/ENVRN SCI, COLL-ADM
INTERNATIONAL AGRICULTURE PROGRAMS
LANDSCAPE ARBORETUM
AGRICULTURAL, FOOD, AND ENVIRONMENTAL EDUCATION DIVISION
STUDENT SERVICES
SOUTHERN RESEARCH AND OUTREACH CENTER - WASECA
SOUTHWEST RESEARCH AND OUTREACH CENTER - LAMBERTON
WEST CENTRAL RESEARCH AND OUTREACH CENTER - MORRIS
NORTHWEST RESEARCH AND OUTREACH CENTER - CROOKSTON
NORTH CENTRAL RESEARCH AND OUTREACH CENTER - GRAND RAPIDS
ROSEMOUNT RESEARCH AND OUTREACH CENTER

The compact between the Executive Vice President and Provost and the Dean of the College of Agricultural, Food and Environmental Sciences for 1999-00 includes the following:

College of Agricultural, Food and Environmental Sciences Academic Priorities: The next two years the College is committed to excellence, internationalization, diversity, and to serving the citizens of Minnesota. These are the fundamental values of the College and, thus, guide all of our programs. In the near future, the College will also pursue several more specific goals and objectives including the following:

1) Undergraduate Education - As a result of changes in recruitment strategy in 1998, undergraduate student enrollment has increased from 825 in Fall '97 to 917 in Fall '98 (11% increase) and new freshman from 119 to 174 (46% increase). While we still have the goal of increasing undergraduate enrollment to at least 1,250, we believe we are on the right track and are encouraged with the current trend. Our efforts to initiate MnSCU partnerships will also be important to increasing our student number. *In this regard, we will focus on partnerships with Southwest State University, University Center - Rochester, Ridgewater College, Central Lakes-Brainerd Community College, and Fond Du Lac Community College. Minnesota State University at Mankato has also visited with us about collaboration. Although we will continue discussions with Minnesota State, there are no agreements under discussion presently.*

The opportunities for partnership with MnSCU institutions is significant. However, we need to be

cautious that the agreements we develop are supported by sufficient resources, so that we may provide a successful outcome. Unless new funding can be secured through legislative requests, we will continue to restrict our efforts to those MnSCU institutions listed above.

COAFES has developed a joint admissions arrangement with General College that will continue to attract and retain "transitional" students. We will closely monitor these students to insure that they are on a path to graduate. GC's compact indicates that 35 students have been admitted through this mechanism for Fall 1998. *Over the coming year we will refine and augment this agreement and relationship.*

Indicators of Progress:

- Undergraduate student enrollment**
- Number of partnerships**
- Number of students enrolled from partnerships**
- Progress of students from joint admissions with General College**
- Funding for collaborative agreements**

2) Expanding the roles of the branch experiment stations - The name of the Branch Experiment Stations has been changed to Research and Outreach Centers (ROC). A committee has been formed to study the implications of name change in light of the new responsibilities implied by the name. The change provides an opportunity to celebrate and promote the capability we have to connect with our constituents. *We need to announce the name change in the next few months in a way that will inform the public about this opportunity to connect with the University of Minnesota.* The expanded role of the Research and Outreach Centers fits well with our University wide legislative request on "Connecting with Communities".

Four of the six ROCs currently have interactive television capability and soon all ROC faculty will have videoconferencing accessibility. The ROCs can play a major role in truly providing an *outstate* access to all academic programs of the University. *COAFES will be requesting funding from the "Capital Request" to help facilitate the completion of activities associated with the conversion process and to equip all ROCs with interactive television capability.*

An integrated land planning framework for the University of Minnesota Rosemount/Empire Township property has been developed by the Rosemount planning task force. This land use plan will provide the framework for innovative and creative research and outreach opportunities at the Rosemount Station. *COAFES supports recommendations of the task force and encourages Central Administration to approve the proposed planning framework.*

Indicators of Progress:

- Interactive television at all ROCs**
- Faculty numbers at ROCs (% of overall faculty)**
- Rosemount planning approval**

3) Strengthening critical programs - The reduction in COAFES faculty numbers in 1997 created substantial holes in our programs and our service capabilities, so the process of rebuilding faculty numbers in high priority areas will continue. *We will especially attempt to increase faculty in areas consistent with the University wide initiatives in Molecular and Cellular Biology, Digital Technology and Design.*

COAFES must also address the rebuilding balance between undergraduate education needs and further growth in high visibility areas like molecular genetics and cell biology. *To this end, COAFES will request 5 new undergraduate teaching and research positions and will offer 20 freshman seminars taught by senior professors.*

The 1999 Supplemental appropriation contains items which will continue the process of rebuilding our capacity to "sustain Minnesota's natural resources." The College refilled some critical positions lost through past retrenchments and reallocation. COAFES has added faculty at the ROCs and St. Paul that focus on environmental protection and economic viability for agricultural producers. CNR has added faculty strength at one station and on campus. Need for some specific community or commodity based faculty will continue to support primary areas vital to Minnesota agriculture. Any new faculty added will be decided based upon a prioritization process initiated by COAFES. In each case, college priorities for new faculty hires will be determined through a participatory process the departments.

COAFES must develop strengths in research, education and outreach which address important challenges to the State's economy, society and environment. In this regard, efforts will be directed in the following areas:

- a) new cropping, and livestock systems and, product and process development.
- b) increasing citizens' ability to make decisions about their communities by examining and identifying appropriate structural change in agriculture, agribusiness, and rural businesses.
- c) increasing the scope and responsiveness of programs to meet the needs of a broad array of farms in our state having different sizes, structures, and practices.
- d) improving the quality of life for rural, urban, and suburban citizens.
- e) enhancing the profitability and national and global competitiveness of Minnesota's natural resource industries in ways that enhance and sustain human, landscape, and animal health at local and statewide levels.
- f) educating food systems professionals for a dynamic economic sector.
- g) contributing to the development of leaders for rural communities.

The 1998 Supplemental appropriation also included funding for three Regional Agricultural and Natural Resources Sustainable Development Partnerships (Regional Partnerships). The mission of the Regional Partnerships is to support agricultural and natural resource sustainable

development by directing the resources of the University of Minnesota's College of Agricultural, Food, and Environmental Sciences (COAFES), the College of Natural Resources (CNR), and the University of Minnesota's Extension Service (Extension) to address community- identified research, educational and outreach needs on an on-going, long-term basis. The main principles of this initiative are: (1) to gain a richer and more vibrant partnership with the citizens in each region and their land grant university through use of active citizen participation, and (2) to address agricultural and natural resource issues in a manner consistent with sustainable development principles. *The 1999 Minnesota State Legislature has been asked to provide \$1.2 million to expand the project.*

Indicators of Progress: **Faculty numbers in high priority areas**
 Freshman seminars and Faculty positions to support
 these seminars
 Legislative support of Regional Partnerships

4) Molecular and Cellular Biology - COAFES has played a central role in Molecular and Cellular Biology at the University of Minnesota for some time, and is poised to make an even larger contribution. COAFES believes that molecular genetics will provide the next major breakthroughs in plant and animal agriculture. There are at least 42 faculty in COAFES (see attached list) who are applying molecular and cellular biology to address issues confronting livestock, horticultural, and agronomic crop production, animal health, and food safety. *Faculty in COAFES are actively collaborating with those in the Colleges of Veterinary Medicine and Biological Sciences in these research areas. three intercollegiate centers have been proposed involving COAFES faculty that direct molecular and cellular biology techniques toward crops have livestock research. They are, Center for Plant Microbial Genomics, Center for Complex Traits and the Center for Cellular and Molecular Mechanisms in Animal Health.*

COAFES faculty in collaboration with faculty in CBS have been successful in attracting significant extramural funding. For example, in the past few months, COAFES and CBS faculty have received approximately \$4 million in NSF funding for research in plant genomics. Faculty will be expected to actively compete for support from the molecular and cellular biology funding provided from the Agricultural State Special.

COAFES is also developing successful collaborative relationships with the College of Veterinary Medicine through efforts of the Food and Agricultural Biotechnology (FAB) Center. *COAFES will continue to provide funding to encourage this collaborative venture which to date has focused primarily on animal health.*

Indicators of Progress: **Faculty numbers in molecular and cellular biology**
 Extramural funding

5) Restructuring the Department of Plant Biology - Plans are proceeding with restructuring Plant Biology. A major effort to hire an outstanding, mid-career scientist and colleagues in plant genomics is underway. The governing structure and policies for the department are being developed. *COAFES and CBS are each allocating \$75,000 to \$100,000 of Minnesota Agricultural Experiment Station Funding on a competitive basis to encourage faculty from both CBS and COAFES to join the department. A search for a new Head of Plant Biology is underway. Faculty from COAFES are being encouraged to join the Department.*

The College also proposed that at least one faculty member in the Department of Plant Biology have a significant (at least a 50%) Extension appointment. There is a great need for public information and education about plant biotechnology. To enhance the public understanding, research-based information needs to be delivered through the media and in public information systems. K-12 teachers are demanding better educational programs for their students in the areas of biology, biotechnology, and applications of these rapidly developing sciences to modern living. Major Minnesota industries in agriculture, food processing, and medicine are seeking more rapid transfer of new technologies from the University plant biology research. A faculty position with a major extension/outreach responsibility will provide the leadership needed to plan and implement sound science-based information and educational programs for diverse public audiences. Located in the Plant Biology Department, this position will provide the important link between the public's agenda and the faculty priorities in research and education.

Indicators of Progress: **Faculty numbers in the new Plant Biology department**
 Extension appointment in Plant Biology
 Graduate student numbers in Plant Biology

6) Agricultural Education - The Agricultural, Food, and Environmental Education Division has been formed and is successfully attracting new students. This new Division is fully shared and co-administered by COAFES and CEHD.

The College continues to be committed to rebuilding and energizing an agricultural, food and environmental education program which has the following central features:

- a) teacher education with the potential for licensure in agricultural education and an area of science.
- b) professional education focusing on human resource development in the agribusiness sector
- c) a major or emphasis on "general" agriculture.
- d) program development and delivery built around intra-institutional and inter-institutional partnerships and collaborations. The Colleges of Agricultural, Food, and Environmental Sciences and Education and Human Development (CEHD) will work with UM-C and several MnSCU state universities and community colleges in these areas.

The 1997 Legislature provided \$200,000 per year to COAFES to support improvements in

agricultural education, program revisions and student recruiting. The reduction in faculty numbers over time has left this program weak in several areas. To build critical mass and strengthen faculty involvement, we have created two joint appointments in the new Agricultural, Food, and Environmental Education Division. *If successful, this effort should result in an increase in student numbers such that in five years at least 30 students per year will be graduating from this program.*

Indicators of Progress: Student numbers in Agricultural Education (graduate and undergraduate)

7) Building effective and efficient partnerships - COAFES partnership with Southwest State University will continue to serve as a pilot project for expanded relationships with MnSCU, other regional institutions, public agencies and private sector organizations. During the coming year the College will pursue:

- a) adding a Crops and Soils Resource major with Southwest State University.
- b) an expanded presence at the Rochester Center via partnerships with Winona State University and other institutions.
- c) an upper Midwest collaborative dairy research and outreach program.
- b) continued programming in dairy labor training in conjunction with MnSCU, producers, private industry, and the Minnesota Department of Agriculture.
- c) agricultural education in partnership with UM-C and MnSCU.
- d) joint program development in environmental sciences, and turf grass management with Central Lakes College. We are also beginning discussions about developing a joint program with UM- Crookston.
- e) completion of a 2 + 2 undergraduate program in environmental science with the Fond du Lac Tribal College. We will be also beginning discussions on a joint extension/outreach program.
- f) several partnerships with the University Center Rochester (UCR). These include undergraduate joint programs in: (1) scientific and technical communication, (2) agricultural education, (3) environmental horticulture, and perhaps (4) agribusiness management. Full development of these programs may take three to four years. A COAFES-UCR partnership could also serve as a platform for improved applied research and outreach in southeast Minnesota.
- g) two new faculty positions will be established in environmental policy in partnership with the Humphrey Institute and the Department of Applied Economics. This will be accomplished via allocation of two half time positions to each unit from the Provost's Office.

The College is also pursuing ways of strengthening our partnership with the University of Minnesota Extension Service. This year we are asking County Extension Educators to become affiliated with one of our academic departments or ROCs. This faculty affiliation will increase

our ability to jointly identify and discuss issues confronting extension audiences, improve communications, and provide opportunities for county educator participation in applied research, credit courses, and informal learning. Faculty affiliate status will be voluntary on the part of the extension educator and the department or ROC.

Indicators of Progress: **Completion of Partnership Agreements**
 Number of Extension Educator "affiliates"
 Establishment of two positive in environmental policy

8) Servicing K-12 - The College will continue to build programs which augment and strengthen K-12 education. This will be achieved by: (a) expanding the reach of the Council on Economic Education (housed in our Department of Applied Economics), (b) utilizing a new program in agricultural education to develop materials and programs focusing on education about agriculture improving the public's awareness of existing high quality programs offered through the Minnesota Landscape Arboretum, (d) further utilizing the resources of the St. Paul Campus and our Research and Outreach Centers to strengthen the connections between science and agriculture for K-12 students and teachers, (e) COAFES will allocate \$30,000 to the ROCs to participate in "Agriculture in the Classroom" in partnership with the Minnesota Department of Agriculture, to do K-12 teacher education in agriculture.

Indicators of Progress: **Agriculture in the Classroom**
 New K-12 partnerships

9) Technology-Enhanced Learning (TEL): Our goal is to make St. Paul the state, regional, and national hub for distance education in COAFES specialties. The College is developing (in cooperation with Extension), and putting into service, the tools, techniques and specialized content necessary to meet the needs of learners throughout the state and region. The College will focus on the following areas:

Indicators of Progress: **Number of courses on line**

Research: COAFES will identify specialized collections within the college that should be digitized and made more widely accessible to students, teachers, and researchers. Examples include, the insect collection in the Department of Entomology, data on Rhizobia, and data on Minnesota's soil types. Seed funding to develop prototypes would come from the college's student computer fees. Additional funds would be sought from the TEL initiatives.

Indicators of Progress: **Digital Collections Established**

Teaching: If COAFES is to maintain its role as the regional and national center for education and research in COAFES specialties, it must make a significant commitment to developing faculty competencies in the area of technology enhanced learning. We have already been leaders in this area with the first two entirely web based courses to receive approval from the graduate school. In the next three years, COAFES will put all semester-based courses online in a minimal format that would allow them to be interfaced with the Minnesota Virtual University (MnVU).

Indicators of Progress: Number of courses on line

COAFES has already allocated funds to purchase a number of multimedia computers for faculty to use to develop online courses and to add web-support to existing courses. Seed funding to develop prototypes and get all COAFES offerings listed online would come from the College's student computer fees and from the budget of the Coordinator of Instructional Computing.

Additional funds would be sought from the TEL initiatives.

Indicators of Progress: Additional TEL Funds Secured. All COAFES courses on line.

COAFES will continue to use the Agricultural Education initiative as an opportunity to create a model program for delivering agricultural, food, and environmental science content using new and emerging technologies. COAFES will provide training in Internet-based education to faculty, K-12 Agricultural teachers, and to county extension educators at a series of CyberCamps. COAFES has already allocated Extension funds to develop curriculum, and additional funds have been obtained from the University of Minnesota Extension Service and the EVPP to hire a coordinator of Internet training. Additional funds for materials will be sought from the TEL initiatives.

Indicators of Progress: CyberCamps completed. TEL Funds obtained.

COAFES will continue to develop course designs, materials, and structures to support partnerships with coordinate campuses, with special attention to Rochester and other MnSCU institutions and international efforts, such as those in Morocco and Ukraine Outreach: COAFES will develop the Research and Outreach Centers as fully equipped Internet connected and ITV educational delivery sites for COAFES distance education programs. Our five-year goal is to use the Research and Outreach Centers as sites for regularly scheduled educational and outreach activities that would include many sectors of the University in addition to traditional agricultural programs. COAFES has allocated funding to create video conferencing access at most sites, and will continue to seek additional funding to make all centers fully Internet connected. Funding will be solicited from TEL as well as the New Media and Design Initiatives to develop curriculum, provide services to learners, and increase access.

Indicators of Progress: TEL Grants obtained.

Internet and Video conferencing - access completed.

10) Implementing technology transfer program - A college technology transfer liaison specialist will be hired during FY99, which will allow the college to work with SPA and the Vice President for Research in more aggressive marketing technologies, new varieties, new products, and new processes developed by our faculty. This position is a high priority for the College. The Graduate School has committed half the salary for two years to be matched by COAFES. *We request that salary and support be committed on a recurring basis from the Graduate School.*

Indicators of Progress: Successfully hiring a TTL

11) Public-private "shared" positions - Where appropriate, the College will develop co-funded faculty positions between the University and clientele groups. For example, such a position was developed in conjunction with the small grains industry and UM-C, at our Northwest Research and Outreach Center, Crookston. A similar relationship has recently been developed with the soybean industry, and an extension soybean agronomist is now in place in St. Paul. We will continue to explore additional partnerships.

12) Faculty redirection - As is well known, the demand, needs, expectations and challenges facing faculty members in colleges such as ours are changing rapidly. Aggressive mechanisms are needed for redirecting faculty efforts by building or enhancing expertise in high priority areas. COAFES' Faculty Development Committee will award during 1999-00, five faculty/year, a faculty redirection grant of \$15,000.

Indicators of Progress: Success of faculty redirection

13) Legislative Requests - Rapid Response - The 1998 Legislature funded a rapid response fund to address emerging issues in Agriculture and Natural Resources. The Rapid Response fund will be utilized to address urgent issues which challenge the State's natural resource-based industries. This fund will greatly enhance the College's ability to respond to the changing needs of agriculture and will also enable us to redirect our current facilities into high need research areas. The current Rapid Response fund was a one time allocation. The College will be requesting that this fund become a recurring allocation during the FY00-01 legislative session at the level of \$2 million for the biennium. **Regional Sustainable Partnerships** - We will continue to support the three sustainable partnerships funded in the FY98-99 biennial request. Citizen Teams have now been formed and a coordinator selected for each of these partnerships. A state-wide coordinating committee has been established to provide coordination among the partnerships. Funding for 2-3 more partnerships will be requested in the FY00-01 biennial request.

**Indicators of Progress: Recurring allocation for the Rapid Response Fund
Funding for Regional Partnerships**

14) Diversity Objectives - Diversity - COAFES has a long commitment to diversity in its faculty, staff and students, and it intends to continue to bring diversity to the College community. In this regard, the college will continue to increase the diversity of its undergraduates (currently at 9.7%), by working with the following:

HBCU Institutions - Twenty two faculty from HBCU institutions (Tuskegee University, Alabama A & M, Langston University and Lincoln University) were invited to visit the University to explore opportunities for mutual collaboration. The College collaborated with the College of Natural Resources, Human Ecology, Veterinary Medicine, and the University of Minnesota Extension Service to sponsor this event. Visions for Change facilitated the discussions. COAFES will follow up to implement the points of collaboration that have been identified.

Fond du Lac Tribal and Community College (FTCC) - COAFES is cooperating with FTCC in establishing a 2 + 2 major in environmental education. COAFES has also allocated funds for two undergraduate scholarships for Native American students from FTCC to enroll in COAFES.

Scholarship - COAFES has allocated \$15,000 (in addition to the \$10,000 from VFC) to support an effort to inform Hispanic youth about careers in agriculture and to recruit them to enroll in an undergraduate major in COAFES.

Visions For Change (VFC) - COAFES is collaborating with South Dakota and North Dakota State Universities on a project called Visions for Change. VFC is funded by the W. K. Kellogg Foundation. One of the primary objectives of VFC is to increase accessibility of underserved communities to the College and University. It has initiated work in the White Earth Reservation and the HBCU institutions.

Indicators of Progress: **Increased diversity of our faculty and staff.**

15) Enrollment and Tuition Management - Estimates for enrollment and tuition management suggest progress from moving from a \$161,000 deficit in 1997-98 toward a revenue neutral position during 1998-99. A continued growth in student numbers is essential for this College to make IMG workable.

Indicators of Progress: **Student numbers**

16) Faculty & Staff Salaries - Per agreements with prior University administrations, COAFES has utilized internal savings and resources to improve its faculty salary competitiveness. Over the past three University adjustments, COAFES has increased its salary average 4.2 per cent more than the University average. A responsive and aggressive faculty retention plan has also been successfully implemented.

College salary policies are regularly reviewed by the College Leadership Council and the College's Faculty Consultative Committee. For 1998-99 faculty salaries increased an average of 7.2 percent. Our P and A staff salaries increased 4.2 percent.

However, we still lag behind peer institutions in both faculty and staff salaries, and we will continue to make faculty and staff salaries a high priority in 1999-00 within the resources availability to the College.

Indicators of Progress: **Faculty and staff salaries and retention**

17) Compact Development Process - The COAFES compact development process will be the primary responsibility of the College Executive Council. However, significant input and review will be solicited from the College Leadership Council, the Faculty Consultative Committee, the

College's Citizen's Cabinet, the undergraduate student board, and our undergraduate Agricultural Ambassadors. We are also planning to hold at least one open forum for additional faculty, staff, and student input.

18) Facilities Issues - Thanks to recent Legislative funding several capital improvement projects have been completed and/or launched. Among the facilities improvements completed are the following:

1. Remodeled Haecker Hall - October 1998. (Complete).
2. Office expansion, interactive television installation at SWROC, Lamberton - August, 1998. (Complete)

Facilities improvements underway are the following:

1. New greenhouse complex - planning underway, Fall 1999
2. Office expansion at NCROC-Grand Rapids - Fall 1998
3. Remodeling of the Horticulture Research Building (HRC600), Chanhassen - Spring 1999
4. New swine research facilities at WCROC-Morris and SROC-Waseca - Spring 1999
5. Remodeling of Snyder Gortner Building to create facilities for cellular-molecular biology research - St. Paul Campus, Spring 1999.

Several buildings on campus and at the Research and Outreach Centers will still need major renovations to accommodate research and educational demands. The College will be including the following in the next capital request.

1. Swine growth-finish unit - WCROC, Morris.
2. Remodeling/ITV Expansion/Remodeling - SROC, Waseca
3. New office space for faculty and staff - NCROC, Crookston

19) Financial Issues - The agreed upon tuition revenue estimate for fiscal year 1998-99 was \$4,861,844.

The agreed upon estimate for indirect cost recovery (ICR) revenue generation for fiscal year 1998-99 was \$957,163, resulting in a unit allocation of \$488,153.

College of Biological Sciences

Compact Planning Issues for FY 1999-00Draft

Primary Planning Issues

1. Academic issues and priorities: *Building upon last year's compact, please provide brief summaries of your highest short-term and long-term academic priorities, the most significant short-term and long-term issues facing your unit, and your initial ideas for addressing these issues and priorities. For any particular priority or issue, the unit should make self-evident how the priority fits into the college's or campus' strategic framework and into the broader strategic framework of the University.*

Short-term academic issues and priorities

- **Improve and expand the undergraduate experience in biology.**

- Freshman seminars: In fall 1998, the College of Biological Sciences welcomed a freshman class derived from the highest achieving pool of applicants ever to any college at the University of Minnesota. During 1998-99, the college offered eight freshman seminars; these offerings reached roughly two-thirds of the current freshman class. Feedback from these seminars has been overwhelmingly positive. We propose to expand our freshman seminar program so that we can offer such an honors-type experience to all of our incoming students, as well as to the students in other colleges who are oriented toward the biological sciences (e.g., freshmen with a pre-med orientation in CLA).
- FY 99-00: Offer 15 freshman seminars (total of 18 credits). By doing so, CBS can be the first college to meet the president's goal of a freshman seminar experience for each of its incoming students. Applying the formula used in 1998-99, we are requesting funding of \$98,181 to support this effort and realize our FY 1999-00 goal.
- FY 00-01: Offer 30 freshman seminars. By doing so, CBS can serve not only its target of 260 new freshmen, but also the needs of biologically oriented freshmen in other colleges. In exchange for this commitment, we request resources for hiring seven junior faculty members under the auspices of the Undergraduate Initiative.
- Decrease student-to-faculty ratio in core courses. Retrenchments in the past forced us to increase the number of students enrolled in each section of our core courses. The effect has been to decrease the quality of the student experience in these key, formative courses. We propose to limit enrollment in these courses to 90 students per section; 40 per section for writing-intensive courses. In exchange for this commitment we request resources for the hiring of four junior faculty members under the auspices of the Undergraduate Initiative.
- Expand and simplify study abroad opportunities.
- College enrollment continues its rather steep upward curve. Fall 1998 undergraduate enrollment increased 31 percent from fall '97, from a headcount of 654 to 855. Graduate enrollments for fall '98 are not yet available, but CBS has its first cohort of Master of Biological Science (MBS) students (approximately 20 for fall '98) and is continuing to receive an excellent response from the community. CBS' long-term goal is to matriculate approximately 500 freshman students and 25 MBS students per year, and to continue the

current level for its MS and Ph.D. programs. Tuition revenues generated from this increase in enrollment will be distributed to support the necessary expansions in Student Services, departmental staffing, and graduate teaching assistantships.

- Implement the new major, provisionally titled “Biology, Society, and the Environment.” We have proposed to offer this in cooperation with CLA and will explore possible connections to the Humphrey Institute.
- Design and phase in the implementation of an intensive, end-of-the-year, one-week course for all freshmen (CBS as well as UMD and Morris biology) at the Itasca Field Station.
- Examine the present curriculum in physiology (cellular and systems, plant, and animal) and develop a plan for improvement.
- **Improve graduate programs in core disciplines of biology.** The perceived quality of the University’s graduate programs has been an abiding concern that has driven the process of biology reorganization. The reorganization of core departments in the biological sciences provides a new foundation for supporting and enhancing graduate programs in these disciplines.
 - During FY 99-00, we will work with the relevant DGSs and department heads to establish procedures that will solidify operational funding and streamline administration of these programs.
 - We have proposed that CBS’ primary goal of the forthcoming Capital Campaign will be to endow fellowships for graduate students. During FY 99-00 we will further develop this case with major prospects.
 - The curriculum in these disciplines must be consolidated into a compelling series of core courses, augmented by discipline-specific, advanced courses. The impending NRC evaluation and ranking process dictates that these reforms occur now, rather than later.
 - Hire new faculty through the Initiative in Molecular and Cellular Biology so as to shift the intellectual center of gravity toward functional genomics. Hiring of new faculty in bioinformatics will also be critical for success in graduate education in molecular and cellular biology.
- **Take advantage of opportunities for curricular improvement in conjunction with semester conversion.** The conversion to semesters presents not only challenges, but also opportunities for change and improvement. We propose the following:
 - Establish new laboratory exercises for the General Biology Program. This program is the major provider of the CLE requirement for “biology with a laboratory” as well as the entrance point into the biological sciences. Dramatic changes in biology demand changes in the student experience. For example, the polymerase chain reaction (PCR) is the basis for many advances in biology. We propose to create a hands-on laboratory experience with this technique for all students enrolled in Biol 1009. Implementing these changes will require approximately \$90,000 of new funding. At the College’s preliminary compact meeting in December, Provost Bruininks indicated he would support a major portion of this request and encouraged the College to move ahead with these plans.

- Create writing-intensive courses in core biology courses at the lower and upper division levels that will allow CBS students to complete their writing-intensive requirement within their major requirements. Adding the writing-intensive component to existing courses is appropriate, but it is challenging because many of these courses are laboratory based and the TAs are not always well-versed in writing instruction. The college estimates that due to above-average course loads and enrollments, the addition of three half-time TAs to serve these classes will be required at a combined cost of \$54,000 (request has also been forwarded to Vice Provost Swan's office).
- **Long-term academic issues and priorities**
 - Biology has become the most dominant of the sciences, in part because of remarkable progress in its disciplines, and in part because of the challenges faced by living organisms. In recent decades, biology has been under-represented at the University of Minnesota. Fortunately, the central administration has recognized that a university cannot be great without strong programs in biology. As the college with responsibility for core biological disciplines, CBS is committed to maintaining and extending the strength of its highly regarded programs. Using a combination of resources from internal reallocation and the Initiative in Molecular and Cellular Biology, we are committed to steering a dramatic strengthening in each of the departments that represent the core disciplines in biology:
 - Ecology, evolution and behavior (EEB)
 - Biochemistry, molecular biology and biophysics (BMBB)
 - Genetics, cell biology and development (GCD)
 - Plant biology
 - Microbiology*
 - Neuroscience*
 - Physiology#
 - During the past academic year, new department heads were appointed for the departments of BMBB and GCD.
 -
 - At present, national searches are underway for new department heads for EEB and Plant biology.

2. Student issues and enrollment management: *Please provide a brief description of the enrollment, retention, and student service plans for your academic programs, as well as other student-centered issues and priorities. Minimally each unit should:*

- *Describe current enrollments.*
- *Identify programs or areas where efforts are planned to increase or control enrollments.*

* These disciplines have undergraduate majors that are administered by CBS, but are otherwise departments of the Medical School.

This discipline has an undergraduate major administered by CLA, but is otherwise a department of the Medical School.

- *Report on the size and scope of these changes. These changes may be strategic efforts by a college or campus to increase or control enrollments, or they may be reactions to increased or decreased demand.*
- College enrollment continues its rather steep upward curve. Fall 1998 undergraduate enrollment increased 31 percent from fall '97, from a headcount of 654 to 855. Graduate enrollments for fall '98 are not yet available, but CBS has its first cohort of Master of Biological Science (MBS) students (approximately 20 for fall '98) and is continuing to receive an excellent response from the community. CBS' long-term goal is to matriculate approximately 500 freshman students and 25 MBS students per year, and to continue the current level for its MS and Ph.D. programs.
- The college has planned for continued, regulated growth in enrollments over a five-year period. This growth requires an increase in both the quality and quantity of curricular offerings (see above), as well as student services.
- Given the increase in enrollment in CBS, the college faces major challenges in keeping pace with the demand for academic and career advising. CBS enjoys an enviable reputation for providing high-quality services to our students, but is severely limited in both staffing and space to meet the rapidly expanding needs.

Related Planning Issues

There are often additional implications of strategic issues raised and choices made by the unit. We are asking you to comment on how the issues and priorities presented in the sections above might affect four broad areas: diversity, technology, faculty/staff issues, and facilities implications. Note that if an issue you have presented in the sections above relates directly to diversity, technology, faculty/staff issues, or facilities, it need not be repeated here.

3. Diversity of the unit - *Do any of your strategic issues or priorities have implications for your diversity strategy? A critical University priority is the importance of improving the diversity of the workforce and students, creating an accepting environment for diversity, and the related implications for academic research, teaching and outreach programs. Please briefly discuss the unit's status, plans and goals in relationship to the University's diversity initiatives.*

- Greater diversity of the work force cannot be achieved without turnover and hiring of new individuals. We intend to use the hiring opportunities mentioned above to increase diversity within the faculty. In addition, we will initiate a program to bring back for seminars some of the alumni from our Life Sciences Undergraduate Research Programs (LSSURP) who have completed graduate programs and will soon be entering the market for faculty positions.
- We continue proactive, programmatic efforts to increase diversity within the undergraduate and graduate student bodies, particularly through our dedicated programs (LSSURP and Math Science Tutorial Program). Continued success of these programs is dependent on additional funding from central sources and increased development of philanthropic and federal grant support.
- Funding for these programs has been modest in scale and challenging to stabilize. Even greater challenges have now arisen as a result of legal decisions in several federal jurisdictions. It is

critical that an intercollegiate effort be made to determine best practices and efficiency in a changing climate.

4. Technology and information/library issues - *Do any of your strategic issues or priorities have technology or information/library implications? These implications might include technology infrastructure issues, additional wiring, hardware, or software needs, the need for additional capital investment or additional technology training and support staff, collection development requirements, and/or access to electronic databases and other information sources.*

- Computing and Networking Needs
 - Add desktop video conferencing for intercampus administration and meetings
 - Upgrade the network cabling within our four buildings
 - Upgrade departmental computer needs to meet PeopleSoft requirements
 - Increase help for desktop computing
 - Share responsibility with the Digital Media Center for distribution, expanded use, maintenance and support of UGather/UPresent software
- Technology to Support Instruction
 - Further develop use of remote instrument viewing and control
 - Implement new types of classroom instruction
 - Improve network access and computing at Itasca
 - Identify funding for instructional equipment
- Technology to Support Research
 - Upgrade imaging center facilities
 - Explore plan to bring Supercomputing to the St. Paul campus
 - Coordinate electron microscopy facilities
 - Upgrade computer modeling labs
 - Develop gene cloning, expression and analysis facility
 - Implement intercollegiate sequencing initiative
 - Improve network access and computing at Cedar Creek
- Administrative Management Tools
 - Student Services admission, tracking and placement information. We have been advised that PeopleSoft will not support the functions that we currently obtain from our proprietary FoxPro database. We believe these functions are critical, and seek support for implementing the necessary interface with PeopleSoft. Associate VP Kvavik will work with Assistant Dean Hanna to address the college's concerns in this area.

- Outreach/Access to the U's Experts. We previously proposed joining with IT in its Community and Industrial Assistance Website. A more comprehensive option arose in conjunction with the Grants Management Project. CBS has now taken lead responsibility for creating a University-wide, Web-based access to the Experts site. Further support will be needed to optimize this service for its intended audience (lay language for students and teachers in K-12; the media; industry; etc.).
- The libraries on both campuses are crucial for success in the reorganization of biology and the Initiative in Molecular and Cellular Biology. Publishing, both in the traditional printed forms and increasingly in electronic forms, continues to expand rapidly in biology. The libraries must keep pace by providing access to this information. This is a daunting task for the Twin Cities campus because major holdings in the core disciplines of biology must be housed in both the BioMedical Library in Minneapolis and in the McGrath Library in St. Paul.

5. Faculty and staff issues - *Do any of your strategic issues or priorities have staffing implications? What are the projected faculty and staff complements for your unit? How do you plan to shift your faculty and staff complement over time to support your strategic goals? Are we recruiting the very best faculty and staff in support of our academic initiatives? A unit might wish to address where faculty are most likely to be added in the next 1 - 5 years and how this is likely to occur, how the faculty/adjunct faculty/staff mix in a college or campus might change in support of the unit's strategic plan, and efforts being made to attract the most capable and high quality faculty to the University. Given that the University is entering a time where there will be a substantial number of faculty retirements and new hires, we are particularly interested in reviewing ideas for bridging programs to the future, data that relates to the quality of hires, and information how new hires relate to the vision for the intellectual future of the discipline.*

- New faculty for undergraduate initiative
- National searches for department heads
- Increase departmental support staff
- Salary/fringe costs of converting faculty from B to A faculty appointments
- Resolution of issues related to the Bell Museum

6. Facilities implications - *Do any of your strategic issues or priorities have facilities implications? What are the primary facility requirements needed to support your strategic plan? Facility requests will still go through the capital planning process. However, if there are facilities requirements essential to addressing a strategic issue or ensuring the success of a priority, they should be listed here. Examples might include electrical or technology-related rewiring needs, programmatic remodeling, or other such facilities changes needed as part of addressing an issue or advancing a priority.*

- Space for administrative functions
 - Immediate
 - Student Services – academic and career advising cannot cope with increased numbers of students
 - Offices for Recruitment and Retention in the Life Sciences - A possible short-term location for these offices has been identified at a cost to the College of \$4,000 - \$8,000. However, a long term location is still needed.
 - Long-term

- Space needed for branch operations in Minneapolis (e.g., branch of Student Services)
- Plan, design and build a Center for Plant and Microbial Genomics
- Repair and replace facilities at Itasca
- Replace chairs in laboratories and offices in Bioscience Building and Gortner Lab
- Replace furniture in student lounge in the basement of Bioscience building

Compact for the College of Natural Resources

Working Draft -- March 15, 1999

FY 1999-2000

Introduction

The College of Natural Resources (CNR) contributes to the management, protection, and sustainable use of natural resources through teaching, research, and outreach. The college has a long history of distinguished accomplishments. It offers the state's only undergraduate and graduate degrees in forestry, wood and paper science, fisheries, and wildlife conservation. The college's natural resources and environmental studies undergraduate program connects across the departments, building on our disciplinary strengths. A substantial amount of research is carried out through the Agricultural Experiment Station and many of the college's outreach programs are conducted in cooperation with the University of Minnesota Extension Service. Most faculty, and many support staff in the college have joint appointments with the Experiment Station and Extension.

The college grew out of societal concern for the conservation and wise use of our natural resources. Early efforts were directed at forests and their associated water, wildlife, recreation, aesthetic, and economic values, and the products provided by these resources. College programs have since evolved to encompass broader environmental and natural resource concerns of ecosystem management, sustainable development, and environmental quality.

Today the CNR faculty are more engaged with society than ever, dealing with the intensifying interest in forests and related resources as a key element of environmental quality and economic progress, and the economic and ecological crisis in traditional agriculture. These concerns present interdisciplinary issues that require the very best University leadership in natural resources and environmental education, research, and outreach.

The college includes three academic departments (Fisheries and Wildlife, Forest Resources, and Wood and Paper Science), the James Ford Bell Museum of Natural History, the Cloquet Forestry Center, programs at the North Central Experiment Station in Grand Rapids, and numerous interdisciplinary centers.

The compact between the Executive Vice President and Provost and the Dean of the College of Natural Resources for 1999-2000 includes the following:

1. College of Natural Resources Academic Issues and Priorities

A. Connect to the University's Molecular and Cellular Biology Initiative

The college desires to connect with the University's expanded molecular and cellular biology initiative, bringing this emphasis to bear in providing environmental and economic benefits to natural resource issues. We are anxious to establish cooperative ties with the new faculty that will be coming to the University's basic science departments. Strong possibilities for collaboration exist in each of the college's departments, sometimes described as "translational" departments to distinguish them from basic science programs. New faculty positions in CNR would represent the best way to ensure the most is made of the University's initiative. We would like to explore with others where we should focus our college priorities in this area to maximize our connection to the University's wider effort and the needs of Minnesotans.

B. Recruit Outstanding Leadership for the Department of Fisheries & Wildlife and Strengthen its Forest Wildlife Program

Ranked fifth in the nation by the *Gourman Report*, the department is conducting a search to replace its head who is returning to the faculty after serving in the position for sixteen years. After meeting with the departmental faculty for their input, the dean has authorized a national search. We feel there is great potential to include female applicants in the pool for this position.

In addition to recruiting a new head, the department is currently seeking to fill an endowed chair in forest wildlife, and a position that may be shared with the Department of Forest Resources in human dimensions of natural resources management. Attracting persons of world-class caliber to these positions will enable the department to retain its solid national ranking. The department head is working hard to enrich the diversity of candidate pools for these positions.

Because of a pending retirement, the creation of a tenure-track wetland ecologist/waterfowl position is desirable. This is a college priority for future funding.

C. Ensure the Continued Excellence of the Department of Forest Resources

Ranked the number one forestry department in the nation two years in a row by the *Gourman Report*, this department is conducting searches for three faculty positions. The first is a research and outreach position in silviculture (based at the North Central Experiment Station in Grand Rapids), the second in forest ecology,

and the third in human dimensions of natural resources management (a position it may share with the Department of Fisheries & Wildlife). A new Extension field staff position in forest-based economic development has just been filled. Searches continue for Extension field staff in forestland ecology and in agroforestry. These field staff positions will better connect the department's research and education programs to Minnesota communities and private forest landowners.

In addition to recruiting applicants of the highest quality for these jobs, the department is committed to further diversifying its faculty composition through the hiring of more females and people of color. The department head is making a concentrated effort to personally contact individuals in these underrepresented groups and to encourage them to apply. He has also charged the three search committees to not only consider those applicants with the most impressive record of accomplishments, but also to consider those who show the most potential for achievement.

When these three positions are filled with outstanding recruits by the fall of 1999, the department will be well-positioned to maintain its excellent ranking.

The department has identified a position in the area of agroforestry as its first priority for future funding. The recently established Center for Integrated Natural Resources and Agricultural Management has been highly successful in bringing research results to diverse individual and organizational interests concerning watershed protection, alternative crops, and productivity in rural Minnesota. The center, cooperatively led by the Colleges of Natural Resources and of Agricultural, Food, and Environmental Sciences (COAFES), needs a lead staff position and base support to reach its potential.

D. Strengthen Further the Department of Wood and Paper Science

One of the strong departments of its kind in the nation, the department prepares students for employment in the \$8 billion Minnesota paper and forest products industries as well as the residential building industries.

Recent faculty departures have created a unique opportunity for the department to revisit its curriculum, research, and outreach offerings. During the last year the department produced a document, "A Strategy for Rebuilding Core Capacity in Teaching, Research, and Outreach," to articulate its vision and identify opportunities for growth. This plan was reviewed and endorsed by a newly created Forest Products Council composed of industry and governmental leaders, a complement to the department's Paper Science and Engineering Council.

In consultation with the departmental faculty, and with the advice of the department's advisory councils, two faculty searches are underway. One position is in forest products marketing; the second is in forest products materials science. The search committees include representation from the Carlson School of Management and the Institute of Technology, respectively. Our goal is to continue to link elements of our wood and paper science program to related, strong programs elsewhere within the University. The forest products materials science search will have direct impact on the Residential Building Science and Technology undergraduate program initiated by the department last year in response to needs expressed by Minnesota's home building industry. The Extension field staff position in forest-based economic development will be affiliated with this department. As in other units, the department is making a concerted effort to recruit a diverse candidate pool for all open positions.

Industry investment of approximately \$200,000 in a new chemistry laboratory will provide increased teaching and research capacity for the department's paper science program. The new lab will be completed this year.

E. Strengthen the Bell Museum

Almost four years ago, the University decided to invest in the James Ford Bell Museum of Natural History and restore some of the luster that had been lost from this grand Minnesota institution, now celebrating 126 years of service. Much progress has been made through University and donor support. The existing building has been painted, lighting has been improved, carpeting replaced, and a general cleaning has made the facility more welcoming for its thousands of visitors. New staffing has complemented long-term personnel to generate renewed enthusiasm and successful programming. This past year alone, Bell Museum researchers were the topics of three color feature stories in the St. Paul Pioneer Press and the Star Tribune. The Bell Museum's Minnesota Ideals distance learning programs - Bell LIVE! and The Jason Project - were the subjects of more than 70 articles in Minnesota newspapers.

As the University enters its capital campaign, the college will be investing heavily in development efforts and seeking private funding for new facilities for the Bell Museum. The existing building dates to 1939, and, though it has served us well, it is totally inadequate as a base for the kind of programming a museum of natural history should deliver in the 21st century. To assist the college, the James Ford Bell Foundation has provided \$50,000 and a pledge of an additional \$100,000 upon successful completion of a search for a capital campaign coordinator. The search is underway for the individual who will be responsible for increasing private support for the Bell from individuals, foundations, and corporations, and be a key member of the college's capital campaign team.

F. Facilitate Graduate Program Consolidation

The separate graduate programs of wildlife conservation and fisheries, housed in the Department of Fisheries and Wildlife, are exploring a merger to become part of conservation biology, the interdisciplinary Graduate School program. If the program faculty agree, the merger will likely occur by the end of spring quarter. If that merger fails, then wildlife conservation and fisheries will likely merge to become a single graduate program. CNR is particularly supportive of the larger merger, but will also support the merger of the two programs into one, if the preferred alternative does not gain faculty support.

G. Explore Initiatives and Potential Collaborations at New Locations or with New Partners

a. University Center Rochester

The college is considering appropriate connections with the University's expanded efforts at Rochester. Recent funding of three new natural resources extension field positions and the new regional partnerships being piloted in the state underscore public interest in connecting with its land grant university. Several linkages exist through the University of Minnesota Extension Service (UMES), the Minnesota Department of Natural Resources, the Eagle Bluff Environmental Learning Center, and the SE Regional Sustainable Development Partnership that may allow the College of Natural Resources to participate more fully in developments at Rochester. Rochester offers promise as a location for additional partnership resources and extension field staffing. CNR has offered University College courses through Rochester. An additional extension position in this region would improve our ability to involve campus faculty in continuing education programs.

b. Rosemount/Empire Property

New opportunities will be afforded the college as the University moves to implement the Integrated Land Planning Framework for the University of Minnesota Rosemount/Empire Property. The dean will become a member of the Board of Directors charged with management of the property.

c. Crookston's Natural Resources Program

The college wants to establish stronger linkages to the natural resources program at Crookston, which needs an additional faculty position in wildlife management to support its curriculum. Ideally, this would be a joint position with CNR's Department of Fisheries and Wildlife to cement an appropriate connection. There is a possibility we could recruit someone who could serve as a Native American/natural resources coordinator. This joint position will require new central resources allocated to CNR and to Crookston.

d. Humphrey Institute of Public Affairs

The college will explore a possible joint position in environmental policy with the Humphrey Institute of Public Affairs. College faculty, already strong in natural resources policy, would welcome such a linkage.

e. Collaboration with Blandin Paper Company

Blandin Paper Company approached the Department of Wood and Paper Science during 1998 with a request for collaboration between the company and the University in the former's professional development program for its employees. During 1999, the two parties will establish effective programs that college faculty will deliver through classroom instruction, interactive television, and the Internet. We will also seek additional partners to deliver part of the necessary programming.

H. Improve Outreach (Continuing Education and Extension)

The College of Natural Resources is strengthening its outreach program in both extension and continuing professional education with new staffing, educational technologies and targeted programming. Our goal is to equip landowners, professionals, and citizens with the knowledge and tools they need to sustainably manage their natural resources. The primary vehicle is our recently established Institute for Sustainable Natural Resources.

Two new Extension field staff positions and a new assistant coordinator for continuing professional education will be located at the Cloquet Forestry Center, and another new Extension field staff position will be placed at the MnSCU institution in Staples. Technology investments will enhance distance learning and on-site educational opportunities for professionals at the Cloquet Forestry Center. New programming strategies will revolve around an expanded staff network, including new natural resources field staff, existing field staff, state faculty, and the University's new regional sustainable development partnerships in Northeastern and Central Minnesota.

Additional investments will need to be made in computers and classroom wiring for Internet access at the Lake Itasca Forestry and Biological Station and the Cloquet Forestry Center. These upgrades will make our field sites technologically compatible with our campus-based infrastructure.

Additional investments in extension staffing in southeastern and central Minnesota would fill out our desired complement of field staff. Support for teaching assistants and release time for faculty would entice faculty to develop and offer more on-line and on-site continuing education offerings, a growth market for our college. Our continuing education institute was started with a

combination of state grant funds and a strategic investment by the college. The state funding will expire in 1999, leaving the need to solidify this important new growth area with additional base funding.

I. Partner with Minnesota Virtual University

The Wood and Paper Science department will add new distance delivered course offerings to its already successful CD-ROM course and its interactive TV and Internet delivered classes at Rainy River and Itasca Community Colleges, and at the University of Minnesota-Duluth. Additional investments would support graduate student and faculty release time for development of new undergraduate and continuing education courses, conversion of existing undergraduate courses to ITV and Internet formats, and downloading of selected courses to remote locations during their initial offerings. Courses would be expected to become self-supporting.

The Fisheries and Wildlife department will build on recent successes in distance delivery of undergraduate classes (done in cooperation with Iowa State University) and continuing professional education modules (done in cooperation with the CNR Institute for Sustainable Natural Resources). Investment in teaching assistant support is needed to adapt and enhance the videotape portions of the undergraduate courses for future use. Investment in more teaching assistant support and faculty release time is needed to encourage faculty to develop other professional development offerings for which there is high demand.

Most faculty in the Forest Resources department are applying new technology enhanced learning methods to classroom and continuing education offerings. The department is placing virtually all course materials on the Internet to improve access for current and prospective students, and using the web to bring diverse cultural and international materials to our students. The Environmental Resources Spatial Analysis Laboratory, and NASA-funded projects like ForNet and the Regional Earth Sciences Application Center are making management information and analysis capability widely available to natural resource professionals and the public. These investments by granting agencies also contribute directly to undergraduate and graduate education programs throughout the college.

J. Transition to Incentives for Managed Growth

The college will continue to strengthen its internal program and budget review process and align budget allocations to performance and goals. Our aim is to reward entrepreneurial endeavors and high performance, while encouraging and

supporting programs that are necessary to accomplish the college's and University's responsibility to serve Minnesota.

After a national search, our new director of financial services joined us in February. We will be examining everything we do in the financial area during the next year, making more data available within the college, adjusting processes and procedures as needed, and tying strategic budget management to planning.

2. Student Issues and Enrollment Management

We have enrolled sixteen students in our new college-wide Honors program. We anticipate a modest increase in participation in the 1999-2000 academic year.

Our total undergraduate enrollment increased 5% to about 555 students in fall 1998. In the fall 1999 semester, we expect a similar number of new transfer enrollments, but foresee a decrease in new freshman enrollment. Enrollment in our degree programs is cyclical and linked to changes in the public dialog about environmental issues and high school counselor impressions of potential career opportunities. We have an action plan for student recruitment that complements efforts of the Office of Admissions, and generally buffers dramatic changes in our enrollment picture. However, because of CNR staffing changes at a critical time in this year's recruitment process we did not maximize our joint efforts with admissions. We met with the admissions director and his staff in March 1999 and made plans to reconnect our joint efforts, including a coordinated telemarketing campaign and direct calls by college students and administrators to potential students. We have begun calling potential new freshman who received admissions offers for fall 1999.

We are also cooperating with central administration and admissions on offers to waive out-of-state tuition for high quality prospective students as an incentive for them to attend CNR. We continue to bolster our scholarship programs through development work, and we will continue to focus considerable energy on recruitment of transfer students.

Intensified recruiting efforts by both the Student Services Office and Department of Wood and Paper Science faculty are expected to increase that department's enrollment steadily over the next few years. We expect some decreases in all other undergraduate degree programs.

Graduate program enrollment had been relatively steady for several years at about 150-160 students. In the last two years, this has increased to approximately 200 students. Some of the growth is in new interdisciplinary graduate programs in Conservation Biology, Water Resources Science, and Environmental Education.

3. Diversity

The college has a goal to improve the climate for and increase participation of under-represented groups in the college's faculty, staff, and student body, and in research and outreach programs. During the past year competitive offers for a tenure-track position in human dimensions of natural resource management were made both to a Native American male and an Asian American female. Unfortunately, both offers were declined. The Wood and Paper Science department hired its first tenured female faculty member, an Asian American woman, from the University of Minnesota-Duluth. The college cooperated with UMES and COAFES in hiring an African American man to lead the NE Regional Sustainable Development Partnership.

Our associate dean, a department head, and our coordinator of communications attended the CNR co-sponsored national symposium, "Keeping our Faculties: Addressing the Recruitment and Retention of Faculty of Color in Higher Education." As a result of this symposium, college leadership is exploring the possibility of inviting some of the speakers back to address our faculty.

As part of our effort to diversify our student body and serve under-represented populations, the dean and representatives of the U.S. Fish and Wildlife Service are in the initial stages of discussion regarding the creation of a natural resources magnet program at Roosevelt High School in Minneapolis.

Mentoring Native American fifth through seventh grade boys and girls from Anderson School in Minneapolis continues through the volunteer effort of our Women in Natural Resources organization. The program began last year with only girls, but was expanded this year to include boys as well.

4. Technology and Information Issues

Over the past year the college has upgraded its network to NTS standards with installation of etherswitches and additional connections at a capital outlay of approximately \$25,000. We also invested approximately \$12,000 to provide wiring and ethernet connections in the Natural Resources Sciences Building. In addition, our web and mail servers have been further upgraded to reduce failures and a student webmaster has been hired to upgrade the college web site. We are making considerable progress in converting printed documents to web accessible documents, including bulletins, directories, course information, and outreach materials.

Over the next year information technology fees for graduate students will be explored after consultation with graduate students and other units. Graduate student fees should be implemented to be consistent with undergraduate fees (\$50/quarter); graduate student course usage is fairly high. However, implementation will be delicate, because a substantial number of our graduate students are in interdisciplinary programs such as

Water Resources Science and Conservation Biology. An approach that distributes the funds equitably to responsible units and student's home units will need to be developed.

Replacing older machines in our student computer lab remains a priority. During the next year, all computers more than three years old will be replaced. We continue to explore additional options for computer access for students beyond those in our computer lab and the student lounge, but security and facility limitations are our most significant obstacles. We will be installing computers in the Entomology, Fisheries, and Wildlife Library and in the Forestry Library to improve student access.

5. Faculty and staff issues

The college's staffing issues and recruiting efforts are described in our academic issues and priorities section above.

6. Facility Implications

The college's number one facility priority continues to be the North Project on the St. Paul campus. New facilities for the Bell Museum and the Department of Fisheries and Wildlife are essential for the continued success of these units. Securing new facilities will be a centerpiece of the college's capital campaign.

As outlined in our capital request, funds will be used to construct facilities on the St. Paul campus to accommodate the exhibition and teaching activities of the Bell Museum of Natural History, the expanding teaching and research needs of the Department of Fisheries & Wildlife, and an addition to Green Hall of the Natural Resources Analysis Laboratory. In addition, this project will evaluate the needs of the College of Natural Resources in the northwest campus quadrant and correct code deficiencies and environmental quality concerns. The Department of Entomology will benefit from the space in Hodson Hall vacated by the Department of Fisheries & Wildlife.

Vacating the existing Bell Museum building on the Minneapolis campus will offer the University a number of options for new uses. The present museum occupies a prime site on the corner of University Avenue and Church Street.

In addition to the North Project, the college continues to work on securing capital funding for improvements at two field sites. First priority in this category is general facility renewal funds for the Cloquet Forestry Center. This project will provide general renewal and/or remodeling of all or parts of nine buildings. The project will protect the investment the University already has in the buildings and improve their quality. They are all 20-40 years-old, and for the most part the buildings and their appliances and furnishings are unchanged since they were constructed. Another goal is an addition to the forest genetics facility at Grand Rapids that will expand our capability to link to biotechnology research.

Appendix 6

Multi-State Research Project Participation at the University of Minnesota

FY 1998 RRF PROGRAM
REVISED ALLOTMENTS
MINNESOTA AGRICULTURAL EXPERIMENT STATION

<u>RRF PROJECT NUMBER</u>	<u>STATION PROJECT NO.</u>	<u>TITLE</u>	<u>RRF</u>	<u>STATE MATCH</u>
NRSP/IR4	05-023	A National Agricultural Program to Clear Pest Management Agents for Minor Uses	\$ -	\$ -
NRSP-8	63-56	National Animal Genome Research Program	\$ 997	\$ -
NC-007	21-56	Plant Germplasm and Information Management and Utilization	\$ -	\$ 32,078
NC-062	63-59	Enteric Diseases of Swine and Cattle: Prevention, Control and Food Safety	\$ 25,079	\$ 37,779
NC-094	25-64	Climate and Agricultural Landscape Productivity Analysis and Assessment in the North Central Region	\$ 45,436	\$ 47,490
NC-100	28-07	RRF Administration, Planning and Coordination	\$ 47,730	\$ -
NC-107	62-37	Bovine Respiratory Disease: Risk Factors, Pathogens, Diagnosis and Management	\$ 6,530	\$ 28,100
NC-119	16-38	Management Systems for Improved Decision Making and Profitability of Dairy Herds	\$ 1,723	\$ 125,689
NC-125	01-016	Biocontrol of Soilborne Plant Pathogens	\$ -	\$ 5,879
NC-129	22-34	Fusarium Mycotoxins in Cereal Grains	\$ 452	\$ 178,438
NC-131	16-84	Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation	\$ 31,981	\$ 150,485
NC-136	12-030	Improvement of Thermal Processes for Foods	\$ 20,317	\$ 120,744
NC-140	21-15	Rootstock and Interstem Effects on Pome and Stone Fruit Trees	\$ -	\$ -
NC-142	13-44	Regulation of Photosynthetic Processes	\$ 1,424	\$ -
NC-167	18-60	Role of N-3/N-6 Polyunsaturated Fatty Acids in Health Maintenance	\$ 312	\$ 500
NC-168	16-17	Advanced Technologies for the Genetic Improvement of Poultry	\$ 59,574	\$ 141,878
NC-174	25-35	Impact of Accelerated Erosion on Soil Properties and Productivity	\$ 11,251	\$ 73,972
NC-185	16-50	Metabolic Relationships in Supply of Nutrients for Lactating Cows	\$ 57,377	\$ 96,894
NC-188	18-22	Market Quality of Hard Wheat for Domestic and International Foods	\$ -	\$ 1,423
NC-189	13-26	Forage Protein Characterization and Utilization for Cattle	\$ 53,550	\$ 4,675
NC-191	14-19	Farm Information Systems	\$ 393	\$ -
NC-193	17-44	Spatial Dynamics of Leafhopper Pests and Their Management on Alfalfa	\$ 11,981	\$ 18,178
NC-197	62-84	Research in Support of a National Eradication Program for Pseudorabies	\$ -	\$ -
NC-202	13-20	Biological and Ecological Basis for Weed Management Decision Support Systems to Reduce Herbicide Use	\$ 65,466	\$ 61,384

FY 1998 RRF PROGRAM
REVISED ALLOTMENTS
MINNESOTA AGRICULTURAL EXPERIMENT STATION

<u>RRF PROJECT NUMBER</u>	<u>STATION PROJECT NO.</u>	<u>TITLE</u>	<u>RRF</u>	<u>STATE MATCH</u>
NC-205	17-32	Ecology and Management of European Corn Borer and Other Stalk-Boring Lepidoptera	\$ 38,302	\$ 92,130
NC-208	14-33	Impact Analyses and Decision Strategies for Agricultural Research	\$ 10,270	\$ 23,834
NC-209	16-42	Genetic Improvement of Cattle Using Molecular Genetic Information	\$ -	\$ -
NC-210	63-63	Positional and Functional Identification of Economically Important Genes in the Pig	\$ 46,785	\$ 72,687
NC-212	17-25	Ecology and Impact of Gypsy Moth Invasion	\$ 2,454	\$ -
NC-213	12-020	Marketing and Delivery of Quality Cereals and Oilseeds	\$ 2,658	\$ 106,975
NC-215	22-33	Overwinter Survival of Heterodera, Pratylenchus, and Associated Nematodes in the North Central Region	\$ 597	\$ 2,750
NC-216	32-52	The Adoption of Sustainable Farming Systems: Implications to Agricultural Education	\$ 1,849	\$ -
NC-217	53-97	The Role of Housing in Rural Community Vitality	\$ 465	\$ 1,215
NC-218	25-22	Characterizing Nitrogen Mineralization and Availability in Crop Systems to Protect Water Resources	\$ 96	\$ 53,971
NE-124	21-35	Genetic Manipulation of Sweet Corn Quality and Stress Resistance	\$ 419	\$ 51,310
NE-144	13-25	Forage Crop Genetics and Breeding to Improve Yield and Quality	\$ -	\$ 58,370
NE-148	16-46	Regulation of Nutrient Use in Food Producing Animals	\$ 776	\$ 12,500
NE-162	14-85	Rural Economic Development: Alternatives in the New Competitive Environment	\$ 1,160	\$ 6,020
NE-165	14-45	Private Strategies, Public Policies, and Food System Performance	\$ 47,183	\$ 69,500
NE-167	52-35	Family Businesses: Interaction in Work and Family Spheres	\$ 2,838	\$ 18,807
NE-176	22-48	Characterization and Mechanisms of Plant Responses to Ozone in the Northeastern U.S.	\$ 383	\$ 13,117
NE-177	14-55	Impacts of Structural Change in the Dairy Industry	\$ -	\$ -
S-213	16-86	Reproductive Performance of Turkeys	\$ 110,184	\$ 195,300
S-256	14-43	An Evaluation of International Markets for Southern Commodities	\$ -	\$ -
S-259	53-66	Rural Labor Markets in the Global Economy	\$ 852	\$ -
S-262	25-44	Diversity and Interactions of Beneficial Bacteria and Fungi in the Rhizosphere	\$ -	\$ -

FY 1998 RRF PROGRAM
REVISED ALLOTMENTS
MINNESOTA AGRICULTURAL EXPERIMENT STATION

<u>RRF PROJECT NUMBER</u>	<u>STATION PROJECT NO.</u>	<u>TITLE</u>	<u>RRF</u>	<u>STATE MATCH</u>
S-263	18-19	Enhancing Food Safety Through Control of Foodborne Disease Agents	\$ 550	\$ -
S-265	17-55	Development and Integration of Entomopathogens into Pest Management Systems	\$ -	\$ -
S-268	22-23	Evaluation and Development of Plant Pathogens for Biological Control of Weeds	\$ -	\$ -
S-273	12-050	Development and Application of Comprehensive Agricultural Ecosystems Models	\$ 20,308	\$ 34,302
S-275	12-082	Animal Manure and Waste Utilization, Treatment and Nuisance Avoidance for a Sustainable Agriculture	\$ 37,559	\$ 246,673
S-278	14-44	Food Demand, Nutrition and Consumer Behavior	\$ -	\$ -
S-284	16-28	Genetic Enhancement of Health and Survival for Dairy Cattle	\$ 30,995	\$ 265,508
W-082	25-19	Pesticides and Other Toxic Organics in Soil and Their Potential for Ground and Surface Water Contamination	\$ 13,261	\$ -
W-102	63-60	Integrated Methods of Parasite Control for Improved Livestock Production	\$ 845	\$ 20,190
W-112	16-73	Reproductive Performance in Domestic Ruminants	\$ 514	\$ 146,252
W-128	25-55	Microirrigation: Management Practices to Sustain Water Quality and Agricultural Productivity	\$ 715	\$ -
W-130	21-73	Freeze Damage and Protection of Fruit and Nut Crops	\$ -	\$ -
W-150	21-84	Genetic Improvement of Beans (<i>Phaseolus Vulgaris</i> L.) for Yield, Disease Resistance and Food Value	\$ -	\$ -
W-175	53-54	Human Physiological & Perceptural Responses to the Textile-Skin Interface	\$ 2,659	\$ -
W-181	18-46	Modifying Milk Fat Composition for Improved Manufacturing Qualities and Consumer Acceptability	\$ -	\$ 7,920
TOTAL FY 1998 RRF PROGRAM			\$ 816,250	\$ 2,624,917

Appendix 7

**University of Minnesota
Faculty with Joint Appointments
(Research/Extension)**

**FY 99 FACULTY WITH JOINT APPOINTMENTS
RESEARCH/EXTENSION**

DEPARTMENT	AES FUNDING	% RES	% EXT	%TEACH OTHER
<u>APPLIED ECONOMICS</u>				
Eidman, V.	\$42,467	37%	34%	29%
Houck Jr., J.	\$52,669	45%	18%	37%
Hammond, J.	\$46,266	57%	7%	36%
Levins, R.	\$14,575	16%	84%	0
Morse, G.	\$19,276	20%	80%	0
Parliament, C.	\$20,031	23%	70%	7%
Welsch, D.	\$22,449	22%	20%	58%
Burh, B.	\$26,640	40%	40%	20%
Fruin, J.	\$39,900	60%	40%	0
Lazarus, W.	\$13,450	20%	80%	0
Olson, K.	\$27,960	40%	20%	40%
Stevens, S.	\$9,965	15%	85%	0
Taff, S.	\$17,712	25%	75%	0
Stinson, T.	\$32,840	54%	46%	0
TOTAL \$	<u>\$386,200</u>			
<u>BIOSYSTEMS & AG ENG</u>				
Morey, V.	\$54,630	50%	25%	25%
Janni, K.	\$47,085	55%	45%	0
Jacobson, L.	\$19,169	25%	75%	0
Shutske, J.	\$17,939	25%	75%	0
Wilcke, W.	\$20,315	25%	75%	0
TOTAL \$	<u>\$159,138</u>			
<u>AGRONOMY & PL GENET</u>				
Crookston, K.	\$62,346	53%	10%	37%
Durgan, B.	\$18,998	26%	71%	3%
Hardman, L.	\$7,490	10%	76%	14%
Oelke, E.	\$31,600	40%	60%	0
Becker, R.	\$17,500	25%	75%	0
Gunsolus, J.	\$19,500	30%	70%	0
TOTAL \$	<u>\$157,434</u>			
<u>ANIMAL SCIENCE</u>				
Ponce de Leon, F. Abel	\$74,976	65%	15%	20%
Linn, J.	\$14,263	16%	77%	7%
Noll, S.	\$17,976	24%	72%	4%
Shurson, G.	\$14,652	16%	24%	60%
DiCostanzo, A.	\$21,015	31%	69%	0
TBA, Beef	\$24,140	45%	55%	0
TOTAL \$	<u>\$167,022</u>			

ENTOMOLOGY

Ascerno, M.	\$35,991	32%	36%	32%
Ragsdale, D.	\$48,350	59%	15%	26%
Hutchison, W.	\$38,130	60%	40%	0
Ostlie, K.	\$25,412	40%	60%	0
Krischik, V.	\$13,952	25%	75%	0
Spivak, M.	\$34,658	57%	14%	29%
TOTAL \$	<u>\$196,493</u>			

FOOD SCIENCE

Busta, F.	\$63,852	54%	7%	11%	28%
Addis, P.	\$27,057	40%	15%	45%	
Fulcher, R.	\$17,514	15%	8%	7%	70%
Tatini, S.	\$43,895	63%	10%	27%	
Wartheson, J.	\$49,338	45%	5%	23%	27%
Schafer, H.	\$7,651	10%	87%	0	3%
Feirtag, J.	\$13,486	21%	74%	0	5%
TOTAL \$	<u>\$222,793</u>				

HORTICULTURAL SCI

Gardner, G.	\$22,331	20%	7%	73%
Hoover, E.	\$13,739	17%	24%	59%
Erwin, J.	\$32,628	55%	45%	0
Tong, C.	\$23,633	41%	59%	0
Meyer, M.	\$8,221	15%	85%	0
TOTAL \$	<u>\$100,552</u>			

PLANT PATHOLOGY

Pfleger, F.	\$35,154	35%	60%	5%
Stienstra, W.	\$12,028	16%	84%	0
Jones, R.	\$14,294	20%	80%	0
TOTAL \$	<u>\$61,476</u>			

RHETORIC

Wahlstrom, B.	\$54,131	52%	8%	40%
TOTAL \$	<u>\$54,131</u>			

SOIL, WATER & CLIMATE

Cheng, H.	\$14,282	12%	22%	66%
Anderson, J.	\$818	1%	88%	11%
Moncrief, J. (St. Spec.)	\$8,763	12%	79%	0
Moncrief, J. (RRF)	\$6,168	9%		
Seeley, M. (St. Spec.)	\$11,895	15%	79%	0
Seeley, M. (RRF)	\$4,758	6%		
Schmitt, M.	\$13,000	20%	80%	0
Halbach, T.	\$13,100	20%	80%	0
Rehm, G.	\$15,246	18%	79%	3%
Rosen, C.	\$15,036	21%	60%	0
Rosen, C. (Hort Sci Sal)	\$11,456	16%		
TOTAL \$	<u>\$114,522</u>			3%

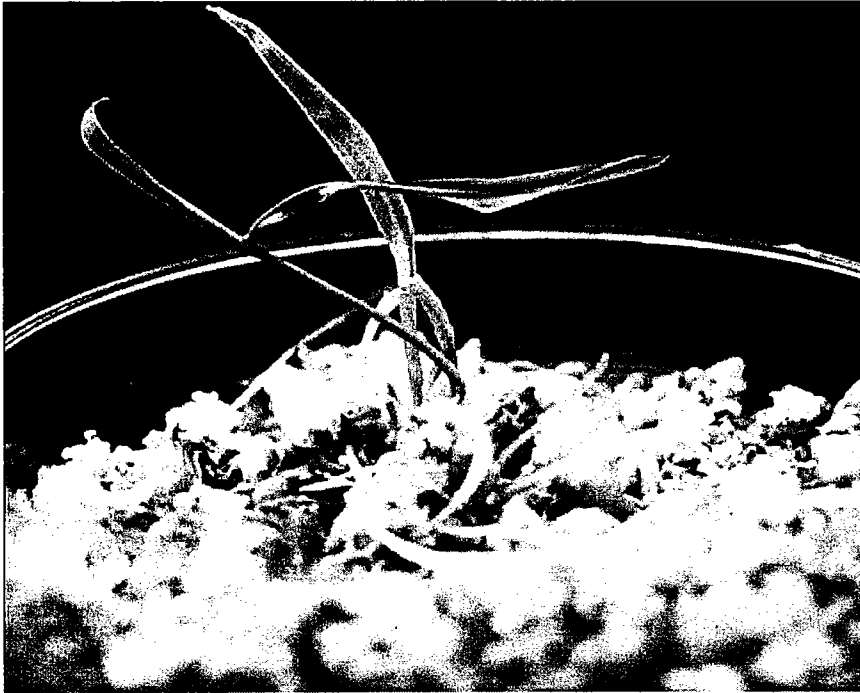
TOTAL COAFES \$1,619,761

Appendix 8

Example of "Minnesota Impacts!" - an Accountability Database

Plant Regeneration Research Bolsters Insect-Resistant Crop Development

UNIVERSITY
OF MINNESOTA



Project Description

In the early 1970's, this laboratory was the first to regenerate complete corn plants from cells in tissue culture (grown artificially in a research lab). This procedure has allowed the genetic engineering of corn, which is now having an impact on agriculture in the U.S. and around the world. The technology also was quickly adopted to achieve the regeneration of other cereals and, in addition to the applied aspects, has led to new and powerful means of testing the behavior and functioning of plant genes that carry special importance. This project is an outgrowth of our previous successful efforts. Our goal at hand is to understand the basis of plant variation that occurs in the regeneration process, since it greatly influences the industrial application of biotechnology. While not every corn line has been effectively regenerated from tissue culture to produce fertile plants, the most common tissue culture line used by industry for producing transgenic plants traces back to this program. Ongoing research strives to identify transgenic plants, which best serve food producers and consumers. Results from our latest research efforts are only beginning to emerge. Tissue culture regeneration technology was one of the tools that initially opened the possibility of producing genetically engineered plants in the late 1980's. Since then, the use of insect-resistant transgenic corn plants has grown significantly. For example, these plants occupied 3 million acres in the U.S. in 1997. The expectation is for at least 10 million acres in 1998. Not only does this foster higher yields for producers, it also enable lower chemical usage in crop production, while providing consumers with more stable supply of healthier grains.

Project Manager Ronald Phillips

Department Agronomy and Plant Genetics

Project Time Frame October 1992 - September 1997

Project Impact



Environmental Details Reductions in the use of chemical pesticide and disease-control products will reduce the incidence of agriculture-related water and soil pollution. As we develop the ability to make rapid genetic changes in crops, producers can plant seed varieties that do not require chemicals for disease or insect control. Further technological breakthroughs eventually lead to widespread industry use, which in turn can have an enormous aggregate impact on the environment. For example, the planting of insect-resistant transgenic cotton in 1996 alone was estimated to save the application of 250,000 gallons of insecticide. As with any new technology, negative effects can occur if not properly monitored. Researchers are also developing herbicide-resistant seed varieties, which allow herbicides to kill weeds without harming the corn itself. Some people are concerned that this will actually lead to an increased use of chemical herbicides. However, our long-term goal is to both minimize chemical applications and facilitate the use of better chemicals when necessary. The herbicide-resistant strains are still a step in the right direction, as they represent motion towards healthier and more environmentally sound chemicals.

Economic Details This research will eventually impact all sectors involved in the food distribution chain. Producers will perhaps be the first to benefit, as they can count on more stable yields that are not as subject to fluctuating insect populations from year to year. At the same time, transgenic corn growers have already begun to reap significantly higher yields. It is estimated that the insect-resistant corn in 1997 alone resulted in a 10-20% yield improvement. Genetic technology also allows improved quantity and quality of cereal products, usually with no additional inputs. The economic advantage is built right into the seed, as lower chemical use results in lower production costs, which are inevitably felt throughout the production, processing, and marketing chain. Ultimately, consumers will benefit from lower prices, fewer price fluctuations, and a more stable supply as new genetic technologies allow for a rapid response time and provide a competitive advantage when crises occur. These encouraging prospects already have biotechnology, seed, and chemical companies showing great hope in this technology.

Quality of Life Details Consumers will also enjoy healthier grains that are produced from our biotechnology. In certain applications, for example, changes in amino acid levels and oil levels are already contributing to higher nutritional quality. Further advances in this respect will have immediate application as long as we continue to obtain economic efficiency.

Location of Project Application

Minnesota Counties

All MN Counties

Beyond Minnesota

International

Project Funding Sources

Funding

Federal Government
State Government

External Funding

Minnesota Corn Research and Promotion Council
Minnesota Crop Improvement Association
MN Soybean Research & Promotion Council
National Research Council of Italy
National Research Council of Spain
USDA
Wild Rice Council

Funding Details

External funding is usually around \$200,000 per year.

Dissemination

Research Has Been Published

Key Publication for Further Information Kaeppler, S.M., R.L. Phillips, and P. Olhoft. 1997. Molecular basis of heritable tissue culture-induced variation in plants. In: Somaclonal variation and induced mutation in crop improvement. Jain, S.M., B.S. Ahloowalia, and D.S. Brar, eds. Kluwer Academic Publishers. The Netherlands, Dordrecht.

Dissemination Method U of Minnesota Extension Service, government agencies, other researchers, mass media, professional journals, industry field representatives, Ag. Experiment Stations, monographs, reports, conference proceedings

Project Leaders

Ronald Phillips
Robert Jones
Hans-Joachim Jung
S. Kaeppler
R. Kowles
B. Phinney
Howard Rines
David Somers
Deon Stuthman
R. Tuberosa

Others Involved in the Project

2 Graduate Students
1 Undergraduate Students

Appendix 9

Specific Hatch Projects and Allocation of Resources by College Allocation of Resources

**AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF MINNESOTA
PLAN OF WORK**

ALLOCATED RESOURCES	GOAL 1	GOAL 2	GOAL 3	GOAL 4	GOAL 5
1862 RESEARCH	\$ 4,809,108	\$ 800,479	\$ 726,785	\$ 2,379,481	\$ 699,981

NOTE: Calculations made on Hatch approved projects. Includes Hatch funding and State match based on FY 98/99 Allocations.

Karen Sheldon, Fiscal Officer
June, 1999

5-YEAR PROJECTIONS	GOAL 1	GOAL 2	GOAL 3	GOAL 4	GOAL 5
FY 99/00	\$ 4,875,000	\$ 815,000	\$ 740,000	\$ 2,420,000	\$ 712,000
FY 00/01	\$ 4,945,000	\$ 830,000	\$ 753,000	\$ 2,465,000	\$ 725,000
FY 01/02	\$ 5,015,000	\$ 845,000	\$ 768,000	\$ 2,510,000	\$ 738,000
FY 02/03	\$ 5,090,000	\$ 860,000	\$ 783,000	\$ 2,555,000	\$ 753,000
FY 03/04	\$ 5,175,000	\$ 875,000	\$ 798,000	\$ 2,600,000	\$ 770,000

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/PROJECT NO	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
BIOSYS & AG ENG GOAL NUMBER 1							
12-020	Marketing and Delivery of Quality Cereals and Oilseeds (WC-213)	R	\$ 8,353	\$ -	\$ 57,796	\$ 30,797	9/30/03
12-028	Development of Machinery Systems and Sensors for Site Specific Farming	H	\$ 18,859	\$ -	\$ 67,587	\$ 8,000	9/30/00
12-030	Improvement of Thermal Processes for Foods (WC-136)	R	\$ -	\$ 12,369	\$ 70,114	\$ 311,653	9/30/00
12-076	Ventilating Systems for Enhancing Indoor Environmental Quality	H	\$ 18,358	\$ -	\$ 31,423	\$ -	9/30/00
12-092	Advanced Sensing and Control Technology for Biological, Agricultural and Food Engineering	H	\$ 8,242	\$ -	\$ 60,082	\$ 144,775	9/30/02
12-094	Biosynthesis of PRRS Viral Glycoproteins in Transgenic Animals	H	\$ 8,241	\$ -	\$ 74,571	\$ 31,760	9/30/02
GOAL NUMBER 3							
12-027	Agricultural Safety and Health Research	H	\$ 10,680	\$ -	\$ 24,566	\$ 4,505	9/30/99
GOAL NUMBER 4							
12-047	Modeling Preferential Flow Processes in Variably-Saturated Porous Media	H	\$ 16,588	\$ -	\$ 67,619	\$ 125,000	9/30/03
12-050	Development and Application of Comprehensive Agricultural Ecosystem Models (S-273)	R	\$ -	\$ 16,588	\$ 101,235	\$ 99,593	9/30/01
12-082	Animal Manure and Waste Utilization, Treatment, and Nuisance Avoidance for a Sustainable Agriculture (S-273)	R	\$ -	\$ 14,329	\$ 124,900	\$ 646,642	9/30/01

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/ PROJECT NO	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
AGRONOMY							
GOAL NUMBER 1							
13-019	Oat Breeding and Genetics	H	\$ 33,917	\$ -	\$ 85,900	\$ 285,453	9/30/01
13-022	Molecular Cytogenetics in Plant Improvement	H	\$ 34,920	\$ -	\$ 125,596	\$ 642,737	9/30/03
13-025	Forage Crop Genetics and Breeding to Improve Yield and Quality (NE-144)	R	\$ -	\$ -	\$ -	\$ -	9/30/02
13-026	Forage Protein Characterization and Utilization for Cattle (NE-141)	R	\$ -	\$ 42,087	\$ 4,359	\$ 4,000	9/30/03
13-028	Genetics and Breeding of Alfalfa for New Uses, Forage Quality, and Persistence	H	\$ -	\$ -	\$ -	\$ 403,472	9/30/02
13-030	Barley Breeding and Genetics	H	\$ 39,881	\$ -	\$ 98,860	\$ 361,606	9/30/00
13-033	Legumes in Cropping Systems	H	\$ 52,570	\$ -	\$ 66,477	\$ 349,589	9/30/01
13-044	Regulation of Photosynthetic Processes (NE-142)	R	\$ -	\$ -	\$ -	\$ -	9/30/02
GOAL NUMBER 4							
13-020	Biological and Ecological Basis for Weed Management Decision Support Systems to Reduce Herbicide Use (NE-143)	R	\$ 39,568	\$ 55,580	\$ 37,348	\$ 324,742	9/30/00
13-067	Ecology of Diversified Grain Cropping Systems	H	\$ 8,035	\$ -	\$ 42,886	\$ 12,091	9/30/99

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
APPLIED ECON GOAL NUMBER 1							
14-022	Indicators of Financial Viability of Minnesota Family Farms	H	\$ 21,208	\$ -	\$ 36,637	\$ 4,000	9/30/01
14-033	Impact Analysis and Decision Strategies for Agricultural Research (NC-208)	R	\$ 14,133	\$ 1,200	\$ 28,533	-	9/30/01
14-035	Management Information Systems for Firms in the Food System	H	\$ 30,694	\$ -	\$ 64,810	\$ 71,000	9/30/01
14-039	Farm Size, Structure, and Efficiency	H	\$ 21,869	\$ -	\$ 55,192	\$ -	9/30/03
14-040	Economic Analysis of Livestock Industry Marketing, Prices, Production and Policy	H	\$ 21,342	\$ -	\$ 37,512	\$ -	9/30/01
14-043	An Evaluation of International Markets for Southern Commodities (S-250)	R	\$ -	\$ -	\$ 43,818	\$ -	9/30/98
14-045	Private Strategies, Public Policies, and Food System Performance (NE-165)	R	\$ 29,055	\$ 44,391	\$ 101,484	\$ 133,460	9/30/01
14-052	Agricultural and Rural Transportation Systems: Analysis and Database and Model Development	H	\$ -	\$ -	\$ 50,713	\$ -	9/30/02
14-055	Impacts of Structural Change in the Dairy Industry (NE-177)	R	\$ 12,646	\$ -	\$ 95,524	\$ 32,000	9/30/01
14-056	Financing Agriculture and Rural America: Issues of Policy, Structure and Technical Change (NC-221)	R	\$ -	\$ -	\$ 36,859	\$ -	9/30/03
14-062	Technical Institutional & Environmental Constraints on Ag. Production: Int'l Comparative Analysis	H	\$ 28,544	\$ -	\$ 70,655	\$ -	9/30/99
14-064	Environmental and Trade Competitiveness Issues in Agriculture	H	\$ 41,606	\$ -	\$ 56,558	\$ 12,708	9/30/02

*

* N.E.O. Project - Goal Assigned by Karen Stearns for This Report

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
<i>Applied Econ (cont'd)</i>							
GOAL NUMBER 2 14-044	Food Demand, Nutrition and Consumer Behavior (S-216)	A	\$ 30,353	\$ -	\$ 55,029	\$ 277,000	9/30/02
GOAL NUMBER 4 14-029	Optimal Resource Use and Technologies Considering Risk and the Environment	H	\$ 15,234	\$ -	\$ 27,088	\$ -	9/30/99
14-076	Economic Analysis of Limited Property Rights Transfer	H	\$ 29,253	\$ -	\$ 22,512	\$ -	9/30/01
14-089	The Impact of Land and Water Management Decisions on Minnesota's People and their Environment	H	\$ 48,197	\$ -	\$ 112,941	\$ -	9/30/01
GOAL NUMBER 5 14-085	Rural Economic Development: Alternatives in the New Competitive Environment (NE-142)	R	\$ 42,816	\$ 4,862	\$ 24,500	\$ -	9/30/02

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
ANIMAL SCIENCE GOAL NUMBER 1							
16-017	Advanced Technologies for the Genetic Improvement of Poultry (NC-108)	R	\$ -	\$ 48,268	\$ 121,488	\$ 66,767	9/30/02
16-028	Genetic Enhancement of Health and Survival for Dairy Cattle (\$-284)	R	\$ -	\$ 28,109	\$ 64,501	\$ 12,122	9/30/02
16-034	Improving Turkey Production Performance	H	\$ 91,728	\$ -	\$ 60,176	\$ 79,305	9/30/01
16-042	Genetic Improvement of Cattle Using Molecular Genetic Information (NC-209)	R	\$ -	\$ -	\$ -	\$ -	9/30/02
16-046	Regulation of Nutrient Use in Food Producing Animals (NC-11)	R	\$ 21,934	\$ -	\$ 75,851	\$ 303,613	9/30/00
16-048	Methods for Achieving Optimal Protein Utilization in Ruminants	H	\$ -	\$ -	\$ 54,131	\$ 66,215	9/30/99
16-050	Metabolic Relationships in Supply of Nutrients for Lactating Cows (NC-115)	R	\$ -	\$ 48,948	\$ 19,270	\$ -	9/30/02
16-060	Nutritional, Physiological and Developmental Regulation of Factors Affecting Swine Growth	H	\$ -	\$ -	\$ 113,761	\$ 106,013	9/30/00
16-064	Evaluation of New Nutritional Technologies for Situation Dependent Diet Formulation in Swine	H	\$ 109,181	\$ -	\$ 63,952	\$ 39,632	9/30/99
16-066	Nutritional/Metabolic Effects on Sow Reproduction and Lactation	H	\$ 30,797	\$ -	\$ 49,803	\$ 33,000	9/30/01
16-072	Factors Affecting the Success of Bovine In Vitro Fertilization	H	\$ 40,307	\$ -	\$ 165,019	\$ 24,020	9/30/01
16-073	Reproductive Performance in Domestic Ruminants (W-112)	R	\$ -	\$ -	\$ -	\$ -	9/30/01

PROJECT REVENUE 1431

* GOAL ASSIGNED BY KAREN SITE LEAD FOR THIS REPORT

DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
GOAL NUMBER 1 (cont'd) 16-080	The Effect of Growth Factors on the Processes of Skeletal Muscle Growth in Meat-Producing Animals	H	\$ 21,736	\$ -	\$ 55,633	\$ 22,814	9/30/02
16-084	Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation (NC-131)	R	\$ -	\$ 28,080	\$ 98,990	\$ 134,703	9/30/00
16-087	Reproductive Performance of Turkeys (S-285)	R	\$ 74,994	\$ 91,133	\$ 150,585	\$ 623,549	9/30/03
GOAL NUMBER 3 16-024	Nutritional Determinants of Cardiovascular Disease	H	\$ -	\$ -	\$ 106,933	\$ 3,000	9/30/00
16-082	Mechanisms of Ion Transport Across Porcine Endometrium	H	\$ -	\$ -	\$ 79,023	\$ 40,407	9/30/03
GOAL NUMBER 5 16-038	Management Systems for Improved Decision Making and Profitability of Dairy Herds (NE-119)	R	\$ -	\$ -	\$ 14,332	\$ 14,193	9/30/02
16-044	Factors Affecting Biological and Economic Efficiency of the Beef Cattle Enterprise	H	\$ -	\$ -	\$ 59,887	\$ 51,746	9/30/99

Project Team 12/3

COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
ENTOMOLOGY							
GOAL NUMBER 1							
17-034	Management Strategies for European Corn Borer, Corn Rootworms, and Stand-Reducing Insects in Corn	H	\$ 11,873	\$ -	\$ 26,176	\$ 26,465	9/30/00
17-060	Development of Molecular Approaches to Predicting and Monitoring Insecticide Resistance	H	\$ -	-	\$ 71,381	\$ 188,077	9/30/01
GOAL NUMBER 2							
17-062	Regulation of Ecdysis-Producing Neurons in Insects and Other Invertebrates	H	\$ -	\$ -	\$ 36,797	\$ 130,938	9/30/02
GOAL NUMBER 4							
17-032	Ecology and Management of European Corn Borer and Other Stalk-boring Lepidoptera (NCC-205)	R	\$ 3,016	\$ 32,773	\$ 49,679	\$ -	9/30/00
17-042	Potato Insects: Biological and Cultural Control	H	\$ 16,000	\$ -	\$ 75,037	\$ 139,995	9/30/99
17-044	Spatial Dynamics of Leafhopper Pests and Their Management on Alfalfa (NCC-193)	R	\$ -	\$ 10,163	\$ -	\$ -	9/30/99
17-049	Management of Insects and Insect Vectors of Plant Pathogens in Potato	H	\$ 5,772	\$ -	\$ 52,118	\$ 121,242	9/30/02
17-055	Development and Integration of Entomopathogens into Pest Management Systems (S-265)	R	\$ -	\$ -	\$ -	\$ -	9/30/00

COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
FOOD SCI & NUTRITION							
GOAL NUMBER 1							
18-065	Structure/Function Relationships in Cereal Grains and Their Influence on Processing and Quality	H	\$ -	\$ -	\$ 22,760	\$ 158,427	9/30/02
GOAL NUMBER 2							
18-018	Controlled Release of Encapsulated Food Flavor	H	\$ 13,833	\$ -	\$ 56,367	\$ 352,398	9/30/02
18-019	Enhancing Food Safety Through Control of Foodborne Disease Agents (S-243)	R	\$ -	\$ -	\$ -	\$ -	9/30/00
18-024	Physico Chemical Properties of Dairy Macromolecules in Food Systems	H	\$ 13,833	\$ -	\$ 53,882	\$ 100,945	9/30/99
18-036	Role of Proteins in Producing Quality Dairy Products	H	\$ 13,833	\$ -	\$ 57,441	\$ 242,892	9/30/00
18-042	Antioxidant and Antimicrobial Properties of Phenolic Compounds from Food Plant Cultivars	H	\$ 3,068	\$ -	\$ 9,724	\$ 12,476	9/30/01
18-046	Modifying Milk Fat Composition for Improved Manufacturing Qualities and Consumer Acceptability (ω -18)	R	\$ -	\$ -	\$ 5,091	\$ -	9/30/99
18-054	Elimination of Escherichia Coli and Salmonellae from Ready to Consume Acid Foods	H	\$ 13,833	\$ -	\$ 55,962	\$ 98,617	9/30/03
18-055	In Vivo Regulatory Systems in Lactic Acid Bacteria: Bacteriophage Resistance & Bacteriocin Production	H	\$ 13,833	\$ -	\$ 59,312	\$ 99,068	9/30/03
18-062	Application of Genetic Engineering Techniques for Dairy Starter Culture Improvement	H	\$ 40,812	\$ -	\$ 110,827	\$ 186,353	9/30/01
18-072	Physical Chemistry of Foods: Relationships of Water Activity, Temperature and Oxygen to Quality	H	\$ 13,833	\$ -	\$ 80,201	\$ 97,720	9/30/02

Plant Team 12/31/98

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
HORTICULTURAL SCI GOAL NUMBER 1							
21-015	Rootstock and Interstem Effects on Pome and Stone Fruit Trees (NC-HD)	R	\$ -	\$ -	\$ -	\$ -	9/30/02
21-017	Role of Endogenous Hormones on Fruit Growth	H	\$ 31,593	\$ -	\$ 98,691	\$ 131	9/30/00
21-019	Develop Potato Varieties and Germplasm with Improved Yield, Stability, Quality, Disease Resistance	H	\$ 41,829	\$ -	\$ 39,512	\$ 53,895	9/30/01
21-028	Postharvest Treatments to Prolong Fresh Fruit & Vegetable Shelf-life	H	\$ 11,723	\$ -	\$ 55,076	\$ 8,450	9/30/00
21-035	Genetic Manipulation of Sweet Corn Quality and Stress Resistance (ME-124)	R	\$ -	\$ -	\$ -	\$ -	9/30/99
21-050	Genetics and Breeding of Floriculture Crops & Native Plant Species	H	\$ 14,743	\$ -	\$ 33,593	\$ -	9/30/00
21-054	The Biology and Utilization of Turfgrasses	H	\$ 26,953	\$ -	\$ 74,632	\$ 91,023	9/30/98
21-055	Breeding, Evaluation & Selection of Hardy Landscape Plants	H	\$ 76,401	\$ -	\$ 130,063	\$ 85,747	9/30/03
21-056	Plant Germplasm and Information Management and Utilization (NC-007)	R	\$ -	\$ -	\$ -	\$ -	9/30/01
21-057	Molecular, Biochemical & Physiological Studies of Juvenility & Maturation in Woody Perennial Species	H	\$ -	\$ -	\$ -	\$ -	9/30/00
21-064	Molecular Analysis of Floral Gene Expression	H	\$ 30,004	\$ -	\$ 74,462	\$ 39,025	9/30/02
21-073	Freeze Damage and Protection of Fruit and Nut Crops (W-130)	R	\$ -	\$ -	\$ -	\$ -	9/30/03
21-074	Plant Cold Hardiness	H	\$ -	\$ -	\$ 101,182	\$ 138,731	9/30/01
21-075	Mechanisms of Environmental Stress Resistance & Injury in Plants	H	\$ -	\$ -	\$ 109,616	\$ 647	9/30/03
21-083	Gene Action in Angiosperms	H	\$ 32,420	\$ -	\$ 48,657	\$ -	9/30/00

- BEING REVISED

(:)* PROJECTS WERE NOT ASSIGNED GOALS BY DEPT. KAREN SIMMONS ASSIGNED GOALS FOR THIS REPORT

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
PLANT PATHOLOGY							
GOAL NUMBER 1							
22-015	Genomics of Cyst Nematode Resistance in Soybean	H	\$ 23,758	\$ -	\$ 66,476	\$ 115,113	9/30/03
22-033	Overwinter Survival of Heterodera, Pratylenchus, and Associated Nematodes in the North Central Region (NC-215)	R	\$ -	\$ -	\$ -	\$ -	9/30/99
22-039	Soybean Cyst Nematode	H	\$ 2,159	\$ -	\$ 25,604	\$ -	9/30/99
22-079	Diagnosis, Epidemiology and Control of Plant Diseases Caused by Badnaviruses	H	\$ 19,329	\$ -	\$ 83,660	\$ 95,293	9/30/01
GOAL NUMBER 2							
22-034	Fusarium Mycotoxins in Cereal Grains (NC-12A)	R	\$ -	\$ -	\$ -	\$ -	9/30/00
GOAL NUMBER 4							
22-018	Ecology of Microbes in Relation to Biocontrol and Plant Disease	H	\$ 16,322	\$ -	\$ 60,322	\$ 118,280	9/30/00
22-019	Genetics of Diversity in Obligately Pathogenic Fungi of Agricultural and Native Plants	H	\$ -	\$ -	\$ 104,663	\$ -	9/30/03
22-023	Evaluation and Development of Plant Pathogens for Biological Control of Weeds (S-248)	R	\$ -	\$ -	\$ -	\$ -	9/30/00
22-035	Genetics of Plant Pathogens	H	\$ -	\$ -	\$ 62,152	\$ 32,450	6/30/98
22-048	Characterization and Mechanisms of Plant Responses to Ozone in the Northeastern U.S. (NC-174)	R	\$ -	\$ -	\$ -	\$ 7,000	9/30/00
22-069	Biology, Control, and Biotechnological Uses of Forest Microbes	H	\$ 47,400	\$ -	\$ 92,624	\$ 96,553	9/30/03
22-074	Atmospheric Deposition: Transported Versus Local Air Pollutants & Their Effects on Crops	H	\$ 9,770	\$ -	\$ 92,705	\$ -	9/30/02
22-092	Plant Biodiversity: Impact on and Interactions with Arbuscular Mycorrhizal Fungi	H	\$ 2,917	\$ -	\$ 42,641	\$ -	9/30/02

actual team 9/30/00

COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
SOIL, WATER & CLIMATE							
GOAL NUMBER 1							
25-017	Microbial Genes Affecting Genotype-Specific Nodulation of Soybeans	H	\$ 2,000	\$ -	\$ 116,741	\$ 17,000	9/30/99
25-033	Improving Crop Nutrition and Ground Water Quality Through Efficient Fertilizer Use	H	\$ 2,000	\$ -	\$ 56,265	\$ 114,000	9/30/99
GOAL NUMBER 4							
25-019	Pesticides and Other Toxic Organics in Soil and Their Potential for Ground and Surface Water Contamination (W-F)	R	\$ -	\$ 11,836	\$ -	\$ -	9/30/00
25-020	Land Resource Assessment, Interpretation, and Delivery for Minnesota Landscapes	H	\$ -	\$ -	\$ 84,961	\$ 535,000	9/30/02
25-022	Characterizing Nitrogen Mineralization and Availability in Crop Systems to Protect Water Resources (WC-21f)	R	\$ -	\$ -	\$ -	\$ -	9/30/00
25-034	Evaluation of Fertilizer and Irrigation Management Practices on Potato Yield & Subsurface WQ	H	\$ 2,000	\$ -	\$ 66,298	\$ -	9/30/00
25-035	Impact of Accelerated Erosion on Soil Properties and Productivity (WC-174)	R	\$ -	\$ 6,168	\$ 7,019	\$ -	9/30/98
25-037	Earthworm-Microbe Interactions Related to the Survival and Dispersal of Genetic Elements in the Environment	H	\$ -	\$ -	\$ 69,993	\$ -	9/30/98
25-039	Water and Solute Transport in the Vadose Zone of Minnesota Outwash Soils: Monitoring and Mechanisms	H	\$ -	\$ -	\$ 53,332	\$ -	9/30/00
25-054	Sustainability of Forest Production - Soil Physical Properties	H	\$ 2,000	\$ -	\$ 64,208	\$ 10,000	9/30/02
25-055	Microirrigation: Management Practices to Sustain Water Quality and Agricultural Productivity (W-12P)	R	\$ -	\$ -	\$ -	\$ -	9/30/99
25-064	Climate and Agricultural Landscape Productivity Analysis and Assessment in the North Central Region (WC-44)	R	\$ 1,870	\$ 40,450	\$ 23,840	\$ 134,500	9/30/99

actual Term. 12/31/98

Being Revised

Term 9/30/98

* GOAL ASSIGNED BY KAREN STEWART FOR THIS PROJECT

**COLLEGE OF NATURAL RESOURCES
FY 1998-1999 HATCH RESEARCH PROJECTS**

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	STATE	OTHER	PROJECT END DATE
FOREST RESOURCES						
GOAL NUMBER 1						
42-037	Remote Sensing Inputs to Inventory and Analysis of Natural Resources	H	\$ -	\$ 88,284	\$ 95,866	9/30/02
42-070	Assessment and Use of Genetic Diversity of Northern Tree Species	H	\$ -	\$ 12,029	\$ 65,000	9/30/99
GOAL NUMBER 4						
42-046	Methods and Procedures for Benefits-Based Management of Recreation and Nonrecreation Resources	H	\$ -	\$ 70,553	\$ 85,000	9/30/02
42-074	Physiology of Tree Growth - Mineral Nutrition and Vegetation Management	H	\$ -	\$ 51,049	\$ 30,000	9/30/99
GOAL NUMBER 5						
42-039	Understanding and Assessing Forest-Based Tourism in Minnesota	H	\$ -	\$ -	\$ -	9/30/00

COLLEGE OF HUMAN ECOLOGY									
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS									
DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE		
DHE									
GOAL NUMBER 5									
53-062	Economic and Political Aspects of Residential Segregation	H	\$ 4,411	\$ -	\$ 26,816	-	9/30/99		
53-065	Environmental Conservation and the Designed Environment	H	\$ 4,411	\$ -	\$ 36,855	\$ -	9/30/99		
53-066	Rural Labor Markets in the Global Economy (S-259)	R	\$ -	\$ -	\$ -	\$ -	9/30/99		
53-070	Impact of Technology on Rural Consumer Access to Food and Fiber Products (NC-222)	R	\$ -	\$ -	\$ -	\$ -	9/30/03		
53-097	The Role of Housing in Rural Community Vitality (NC-217)	R	\$ 4,411	\$ -	\$ 20,438	\$ -	9/30/99		

* NEW PROJECT - GOAL ASSIGNED BY AGS - NOT P.I.

COLLEGE OF HUMAN ECOLOGY

FY 1998-1999 HATCH/MRF RESEARCH PROJECTS

DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
FAMILY SOCIAL SCI. GOAL NUMBER 5							
52-035	Family Business: Interaction in Work and Family Spheres (16-167)	R	\$ -	\$ -	-	-	9/30/99
52-040	Family Systems and Family Realities	H	\$ 6,411	\$ -	\$ 32,364	\$ -	9/30/02
52-049	Family Boundary Ambiguity in Alzheimer's Disease and Other Situations of Unclear Loss and Change	H	\$ 6,411	\$ -	\$ 32,132	\$ -	9/30/03
52-054	Decision Making Integral to Relationship-Ending Transitions	H	\$ 6,411	\$ -	\$ 26,119	\$ -	9/30/01
52-055	Family Economic Well-Being: Self-Sufficiency Goals for Low-Income and Public Assistance Families	H	\$ 6,411	\$ -	\$ 27,264	\$ -	9/30/01
52-066	Intergenerational Relationships in Southeast Asian Refugee Families	H	\$ -	\$ -	\$ 14,278	\$ -	9/30/01
52-073	Family Business: Work and Family Integration	H	\$ 6,411	\$ -	\$ 26,182	\$ -	9/30/00
52-074	Family Business: Stress, Resources, and Satisfaction	H	\$ 2,000	\$ -	\$ 9,726	\$ 1,711	9/30/00
52-076	Custodial and Placement Arrangements for Drug-Exposed Infants	H	\$ 6,411	\$ -	\$ 11,503	\$ 1,274	9/30/01
52-077	Self-Employment: An Economic Alternative to Support Hispanic House-Holders at a Level Above Poverty	H	\$ 6,411	\$ -	\$ 11,728	\$ -	9/30/00

New Projects - Goal Assigned by AES - NOT P.I.

**COLLEGE OF HUMAN ECOLOGY
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS**

DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE
FOOD SCI & NUTRITION GOAL NUMBER 3 18-015	Characteristics of Value-Added Products from Cereal Grains	H	\$ 500	\$ -	\$ 29,061	\$ 25,288	9/30/98
18-022	Market Quality of Hard Wheat for Domestic and International Foods (NC-18F)	R	\$ -	\$ -	1291	\$ -	9/30/98
18-026	Evaluation of Chemoprotective Mechanisms and Consumption of Selected Dietary Constituents	H	\$ 500	\$ -	\$ 40,437	\$ 7,621	9/30/99
18-029	Examination of Nutritional Status and Dietary Behavior Minority Populations	H	\$ -	\$ -	\$ -	\$ -	9/30/01
18-034	Dietary Regulation of Sex Hormone Synthesis and Metabolism	H	\$ 9,630	\$ -	\$ 45,261	\$ 168,157	9/30/99
18-057	Factors Affecting Food Acceptability	H	\$ 13,833	\$ -	\$ 39,069	\$ 97,112	9/30/00
18-059	Implications of Food Fats in Plasma Lipoprotein Metab	H	\$ 13,833	\$ -	\$ 22,443	\$ 14,544	9/30/98
18-060	Role of N-3/N-6 Polyunsaturated Fatty Acids in Health Maintenance (NC-167)	R	\$ 13,833	\$ -	\$ 35,015	\$ 77,882	9/30/02
18-064	Defining a Desirable Dietary Fiber Intake	H	\$ 13,833	\$ -	\$ 57,511	\$ 489,781	9/30/01
18-069	Bifidobacteria, Fermentable Carbohydrate, and Colon	H	\$ 13,833	\$ -	\$ 34,027	\$ 249,657	9/30/00

Term 9/30/98
Term 9/30/98

Project Being Terminated
P.I. ... THE NEW PROJECT

→ New Project - Goal Assigned is AES - NOT P.I.

COLLEGE OF HUMAN ECOLOGY									
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS									
DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE		
SOCIAL WORK									
GOAL NUMBER 3									
55-038	The Impact of Managed Mental Health Care on Rural and Urban Agencies	H	\$ 1,500	\$ -	\$ 16,099	\$ -	9/30/00		
GOAL NUMBER 5									
55-035	Vital Involvement Practice: Promoting Life Strengths Among Frail Elders	H	\$ 9,779	\$ -	\$ 28,177	\$ -	9/30/02		
55-036	Social Support, Social Networks, and Family Violence	H	\$ 10,749	\$ -	\$ 18,759	\$ -	9/30/03		
55-037	Resistance and Resignation regarding Criminal Behavior Among Pre-Adolescent Girls	H	\$ -	\$ -	\$ -	\$ -	9/30/99		
55-047	Professionalism Among Social Workers: Linkages Among Family, School, and Community	H	\$ 5,000	\$ -	\$ 81,730	\$ -	9/30/03		
55-048	Patterns of Adaptation and Acceptance of Hispanics in American Communities	H	\$ 37,787	\$ -	\$ 6,906	\$ -	9/30/99		

GOAL ASSIGNED BY AES - NOT P.I.

COLLEGE OF VETERINARY MEDICINE									
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS									
DEPT/PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE		
CLIN & POP SCIENCES GOAL NUMBER 1 62-032	Rapid Identification of Pathogenic Mucosal Flora of Pigs Using a Molecular Approach	H	\$ 5,000	\$ -	\$ 22,860	\$ -	9/30/99		
62-035	Investigation of New and Emerging Diseases in Swine	H	\$ 5,000		\$ 20,000	\$ -	9/30/99		
62-037	Bovine Respiratory Disease: Risk Factors, Pathogens, Diagnosis and Management (NC-107)	R	\$ 20,000	\$ 5,500	\$ 22,208	\$ -	9/30/01		

HATCH SUGGESTED ENTIRETY IS PROJECTS - --o- Admin

COLLEGE OF VETERINARY MEDICINE									
FY 1998-1999 HATCH/MRF RESEARCH PROJECTS									
DEPT/ PROJECT NO.	PROJECT TITLE	SOURCE	HATCH	MRF	STATE	OTHER	PROJECT END DATE		
VET PATHOBIOLOGY									
GOAL NUMBER 1									
63-053	Directed Assignment to Improve Resolution of Livestock Genetic Maps	H	\$ -	\$ -	\$ 100,000	\$ -	9/30/00		
63-056	National Animal Genome Research Program (NAGRP-9)	R	\$ -	\$ -	\$ -	\$ -	9/30/98		
63-059	Enteric Diseases of Swine and Cattle: Prevention, Control and Food Safety (MC-62)	R	\$ -	\$ 60,407	\$ -	\$ -	9/30/02		
63-060	Integrated Methods of Parasite Control for Improved Livestock Production (W-102)	R	\$ -	\$ -	\$ -	\$ -	9/30/99		
63-063	Positional and Functional Identification of Economically Important Genes in the Pig (MC-210)	R	\$ -	\$ -	\$ -	\$ -	9/30/02		
GOAL NUMBER 2									
63-025	Reduce Preharvest Salmonella Enteritidis/Poultry: Fimbrial Protein Based Live Recombinant Vaccine	H	\$ -	\$ -	\$ 25,354	\$ -	9/30/00		

* GOAL ASSIGNED BY AES - NOT P.I.

