



National Program Leader Training Manual



December 15, 2003

National Program Staff (NPS)
Agricultural Research Service (ARS)
Research, Education, and Economics (REE)
United States Department of Agriculture (USDA)
George Washington Carver Center
5601 Sunnyside Avenue
Beltsville, Maryland 20705

INTRODUCTION

Welcome to the National Program Staff (NPS). The purpose of this training manual is to provide quick access to information you will need to perform your functions effectively. The manual outlines roles and responsibilities and explains how research projects are managed at the Agricultural Research Service (ARS). You will find detailed information on the interactions you need to establish with internal and external customers. The National Program cycle and the functions you will be expected to perform throughout the year are provided to help you plan and manage your National Program. The manual is available as a hard copy, and electronically at <http://www.npstaff.ars.usda.gov>. The electronic version has direct links to specific intranet and internet sites should you wish to obtain additional information about a particular subject matter. Comments and suggestions for additions and revisions are welcomed. These should be addressed by email to <mailto:cgg@ars.usda.gov>.



PREFACE

National Program Leaders (NPLs) perform a critical function for the Agricultural Research Service by providing both programmatic leadership and by serving as technical experts. Their job is extremely broad, complicated, and demanding, but one that can also provide much satisfaction. NPLs' work adds greatly to the success of the Agency. The Agricultural Research Service is a large, dispersed research organization with more than 2,000 permanent scientists working on 1,050 permanent research projects at more than 100 locations across the country and five foreign laboratories. The Agency also includes the National Agricultural Library in Beltsville with its 150 librarians, technical information specialists, and other library specialists. ARS employs matrix management to provide both programmatic guidance and line management. The objective is to have the Headquarters-based National Program Staff take the lead in providing the programmatic vision and research direction to ARS scientists through the National Program structure. Responsibility for implementing the research and day-to-day management of the research falls to the Area Directors and the line management structure they oversee. Working as a team with line management, NPLs support ARS scientists to ensure research is conducted with the highest standards of quality and have the greatest impact at the national level.

This training manual has been prepared to help orient NPLs to the basic aspects of their job. They will find that it answers many of their immediate questions. It also identifies resources available to help with the job. Taking the time to studying it will help to ensure that you are more successful in your responsibility.

I would like to thank Cyril G. Gay and the National Program Leader Training Committee for preparation of this training manual.

*Dwayne R. Buxton
Deputy Administrator
National Program Staff*

Agricultural Research Service

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I. ARS

Introduction

Role

Mission

Values

History

Key Accomplishments

Introduction

The Agricultural Research Service (ARS) is the principal in-house research agency of the U.S. Department of Agriculture (USDA). ARS is one of four agencies in the Research, Education, and Economics (REE) mission area. ARS is charged with extending the Nation's scientific knowledge with research projects in agriculture, human nutrition, food safety, natural resources, fiber, animal and plant health, the environment, and other topics affecting the American people on a daily basis. ARS supports more than 2,100 scientist years organized into approximately 1,050 permanent research projects at over 100 locations across the country and five overseas laboratories and more than 150 librarians, technical information specialists, and other library specialists.

Role

ARS conducts innovative research to find solutions to problems of high national priority. ARS often selects high-risk scientific endeavors to make significant breakthroughs in important problem areas but also complements the work of State Colleges and Universities, State Agricultural Experiment Stations (SAES), other Federal agencies, and the private sector. Mechanisms for addressing State and local issues are already in place; therefore, activities within ARS focus on issues having a regional or national scope and where there is a clear Federal role. ARS also provides research support to USDA action and regulatory agencies and to several other Federal regulatory agencies, including the Food and Drug Administration and the Environmental Protection Agency.

Mission

Our mission is to conduct research to develop and transfer solutions to agricultural problems of high national priority and provide information access and dissemination to:

- Ensure high-quality, safe food, and other products
- Access the nutritional needs of Americans
- Sustain a competitive agricultural economy
- Enhance the natural resource base and the environment
- Provide economic opportunities for rural citizens, communities, and society as a whole

Values

To fulfill our purpose and achieve our mission, we abide by 14 enduring values that are the foundation of our organization:

Accountability

We are responsible to the public, our customers, partners, stakeholders, and co-workers.

Appreciation

We respect one another and value everyone's contribution.

Cooperation

We work with others to most effectively use available knowledge, resources, and technologies.

Creativity

Creativity is the key to solving problems that impact our Nation. The quest for creative solutions should invigorate all of employees and pervade throughout ARS. In our drive to be creative, we support well-conceived risk-taking and understand that it will not always lead to success. We embrace creativity and consistently pursue new opportunities. We look for ways to make our research and development capabilities, our products, and our services more useful to our customers, and our practices, processes, and systems more efficient and effective. We listen to and collaborate with our customers to identify and make widely available scientific information and potential new products that bring solutions to problems of high National priority.

Diversity

We encourage and promote diversity throughout our organization.

Global Perspective

We encourage and promote an international perspective and collaborations worldwide.

Integrity

We demand of ourselves and others the highest ethical standards, and our research, products, and processes will be of the highest quality. Our conduct as an agency, and as individuals within it, will always reflect the highest standards of integrity. We will demonstrate open, honest and ethical behavior in all dealings with customers, partners, stakeholders, colleagues, and the public. The ARS name is a source of pride to us and should inspire trust in all with whom we come in contact. We must do more than simply do things right—we must also do the right thing!

Leadership

Leaders advance teamwork by imparting clarity of purpose, a shared sense of goals, and a joint commitment to excellence. Leaders empower those around them by sharing knowledge and authority and rewarding outstanding individual effort. We are dedicated to providing opportunities for leadership at all levels in our organization. Leaders are those who step forward to achieve difficult goals, envisioning what needs to happen, and motivating others. They utilize the particular talents of every individual and resolve

conflict by helping others to focus on common goals. Leaders build relationships with others throughout ARS, share ideas, provide support, and help assure that the best practices prevail throughout ARS.

Objectivity

We are proud of our scientific objectivity and will continue to provide unbiased information.

Partnership

We encourage partnerships with other organizations and individuals.

Quality

We are dedicated to the highest standards of quality in agricultural research and information dissemination.

Relevance

We respond to the needs of the agricultural community and all society.

Service

We listen to our customers, both internal and external, and provide them with high-quality scientific research, technologies, and information. We are deeply committed to meeting the needs of our customers and constantly focus on customer satisfaction. We seek long-term relationships based on our comprehensive understanding of all our customers' needs and on the value we provide through our research, the products we discover, and the services we provide.

Sharing

We are committed to share information broadly and in a timely fashion.

Strategy

We shape the future by strategically positioning our resources and capabilities.

Teamwork

We know that to be a successful research organization we must work together, frequently transcending organizational and geographic boundaries to meet the changing needs of our customers.

We want all of our colleagues to contribute to the best of their ability, individually and in teams. Teamwork improves the quality of decisions and increases the likelihood that good decisions will be acted upon. Teamwork sustains a spirit of excitement, fulfillment, pride and passion for ARS, enabling us to succeed in all of our endeavors and continually learn as individuals and as an organization.

History

ARS has a proud history encompassing over 150 years of scientific accomplishments. A brief summary of the history of the U.S. Department of Agriculture and ARS follows.

Creation of the Agriculture Department



The Agriculture Department had its debut in the U.S. Patent Office in 1839 to collect statistics, distribute seeds/plant and compile/distribute information. In 1862, President Abraham Lincoln established the United States Department of Agriculture (USDA). The first Agriculture Building was constructed in 1867 on the Mall in Washington, DC. This Building was torn-down in the 1930's to make room for the current USDA complex on Independence Avenue.

The Official Seal



**Seal of the United States
Department of Agriculture**

By an Act of Congress, the Secretary of Agriculture was authorized and directed on August 8, 1894, to procure a proper seal to be known as the Official Seal of the Department of Agriculture. The design for the seal was drawn by A. H. Baldwin, an artist in the employ of the Department. By an order dated June 21, 1895, Honorable J. Sterling Morton, Secretary of Agriculture, proclaimed the adoption of the Official Seal for the Department of Agriculture. For additional information visit:

<http://www.nal.usda.gov/speccoll/collect/history/seal.htm>

Agricultural Research Service



ARS was created as the USDA's primary scientific research agency in 1953. Although ARS can trace its heritage back to the early 19th Century, we celebrated our 50th anniversary as an agency on November 2, 2003. For a complete chronological history of the U.S. Agriculture Department and ARS see: <http://www.ars.usda.gov/is/timeline/chron.htm>

Animal Research

USDA began research on animal diseases in 1868. In 1883, animal research was transferred from the Washington D.C. Mall to the new Veterinary Experiment Station at 18th Street and Benning Road. In 1897, the Veterinary Experiment Station was relocated to Bethesda, MD. The Bethesda site is where the Bethesda-Chevy Chase Recreation Area is now located. The dairy and animal husbandry research was transferred to Beltsville, MD, in 1910, and the animal disease research was relocated to Beltsville in 1936.

Plant Research

In 1903, the Experimental Farm and Experimental Garden were expanded and relocated from the Mall to the newly established Arlington Farms Experiment Station in Arlington, VA. This site is where the Pentagon is now located. The U.S. National Arboretum was established in 1927 at New York Avenue and Bladensburg Road in Washington, DC. In 1939, plant research at Arlington Farms Experiment Station was transferred to Beltsville, MD.

Many Agencies can Trace their History to USDA

It is interesting that many Federal agencies began as part of USDA and many still have facilities located at our Beltsville research campus: Food and Drug Administration (FDA), Environmental Protection Agency (EPA), Biological Survey of the Department of the Interior, Forest Service, and Natural Resources Conservation Service. In 1940, Biological Survey Division of USDA transferred to the Department of Interior. With this transfer, 2,238 acres was given to the Department of Interior to establish the Patuxent Wildlife Refuge. Animal disease regulatory activities were transferred from ARS to USDA's Animal and Plant Health Inspection Service (APHIS) in 1971. ARS continues to conduct research today to support these action and regulatory agencies.

Key Accomplishments

The numbers of scientific discoveries made by our scientists since the inception of the Agriculture Department in 1862 are too many to summarize here. The complete history of ARS accomplishments can be reviewed at:

<http://www.ars.usda.gov/is/timeline/comp.htm>. The following selection provides a few key accomplishments that have had an impact on science, agriculture, our natural resources, human health, and the control of diseases:

- In 1862, the first USDA research bulletin identified the sugar content of several varieties of grapes and their suitability for wine.
- In 1869, the USDA publishes the first analysis of food for U.S. corn. Many analyses of food items have since been published with significant impact on the production of food animals and human nutrition. See the following World Wide Web (www) ARS site for additional information (<http://www.ars.usda.gov/is/timeline/nutrition.htm>).
- In 1873, the Washington navel orange is introduced into California with trees secured from Brazil by USDA (<http://www.ars.usda.gov/is/timeline/citrus.htm>).
- In 1883, methods were developed to detect food adulteration that led to the Pure Food and Drug Act (<http://www.ars.usda.gov/is/timeline/nutrition.htm>).
- In 1888, Vedalia beetles imported from Australia to control fluted scale on citrus were the first successful biological control program of a crop pest. Many biological control programs have since been implemented (<http://www.ars.usda.gov/is/timeline/insect.htm>).
- In 1893, the cause of cattle tick fever is discovered, demonstrating that a disease-producing microorganism could be transmitted by an arthropod from one animal to another (<http://www.ars.usda.gov/is/timeline/tick.htm>).
- In 1903, demonstrated that a virus causes classical swine fever (hog cholera) and that recovering hogs are immune for life (<http://www.ars.usda.gov/is/timeline/cholera.htm>).
- In 1906, developed a live-virus vaccine for hog cholera.
- In 1910, demonstrated that pasteurization kills toxin-producing organisms in raw milk without destroying beneficial lactic acid bacteria.
- In 1917, demonstrated that raw milk could transmit a bacterium, *Brucella abortus*, which causes brucellosis in cattle and undulant fever in humans.
- In 1918, discovered that relative day and night length control flowering, known as photoperiodism (<http://www.ars.usda.gov/is/timeline/light.htm>).
- In 1930, USDA develops Strain 19 of *Brucella abortus*, forming the basis for a brucellosis vaccine in a control and eradication program.
- In 1934, accomplished first typing of a strain of bacteria with bacteriophage.



- In 1935, initiated the National Poultry Improvement Plan to improve production and marketing qualities of chickens and turkeys through performance testing.
- In 1938, proposed insect-sterilization technique using x-radiation that led to the eradication of screwworm, *Cochliomyia hominivorax* (<http://www.ars.usda.gov/is/timeline/worm.htm>).
- In 1941, developed mildew- and rot-proof fabrics for bandages and also developed deep-vat fermentation, allowing mass-production of penicillin (<http://www.ars.usda.gov/is/timeline/penicillin.htm>). Both were important contributions to the survival of our soldiers during World War II.
- In 1942, eradicated Dourine from horses, a chronic trypanosomal disease of Equidae.
- In 1943, eradicated Cattle Fever, caused by blood parasites (Babesiosis and Anaplasmosis) that are transmitted by ticks (*Boophilus microplus*). Cattle Fever still remains a threat to our cattle industry today when importing cattle from Mexico (<http://www.ars.usda.gov/is/timeline/tick.htm>).
- In 1944, developed complement fixation test to diagnose anaplasmosis in cattle.
- In 1947, first to isolate Avian leukosis virus.
- In 1949, released bluecrop highbush blueberry, the most widely planted blueberry cultivar in the world.
- In 1957, virus that causes foot-and-mouth disease (FMD) is purified, isolated, and photographed (<http://www.ars.usda.gov/is/timeline/FMD.htm>).
- In 1965, discovered molecular structure of transfer RNA (<http://www.ars.usda.gov/is/timeline/RNA.htm>).
- In 1966, eradicated screwworm fly from the U.S. using sterilization (<http://www.ars.usda.gov/is/timeline/worm.htm>). Also produced the first electron microscope image produced of the virus that causes foot-and-mouth disease in infected animal cells (<http://www.ars.usda.gov/is/timeline/FMD.htm>).
- In 1967, discovered viroids, the smallest known agents of plant disease (<http://www.ars.usda.gov/is/timeline/viroid.htm>).
- In 1970, identified active ingredient in gypsy moth pheromone and synthesized an attractant, disparlure, as effective as female's natural attractant (<http://www.ars.usda.gov/is/timeline/insect.htm>).
- In 1971, role of enzyme "rubisco" on photosynthesis and photorespiration demonstrated (<http://www.ars.usda.gov/is/timeline/light.htm>).
- In 1976, ARS patents the SuperSlurper, a combination of starch and a synthetic chemical that absorbs hundreds of times its own weight in water (<http://www.ars.usda.gov/is/timeline/sslurp.htm>).

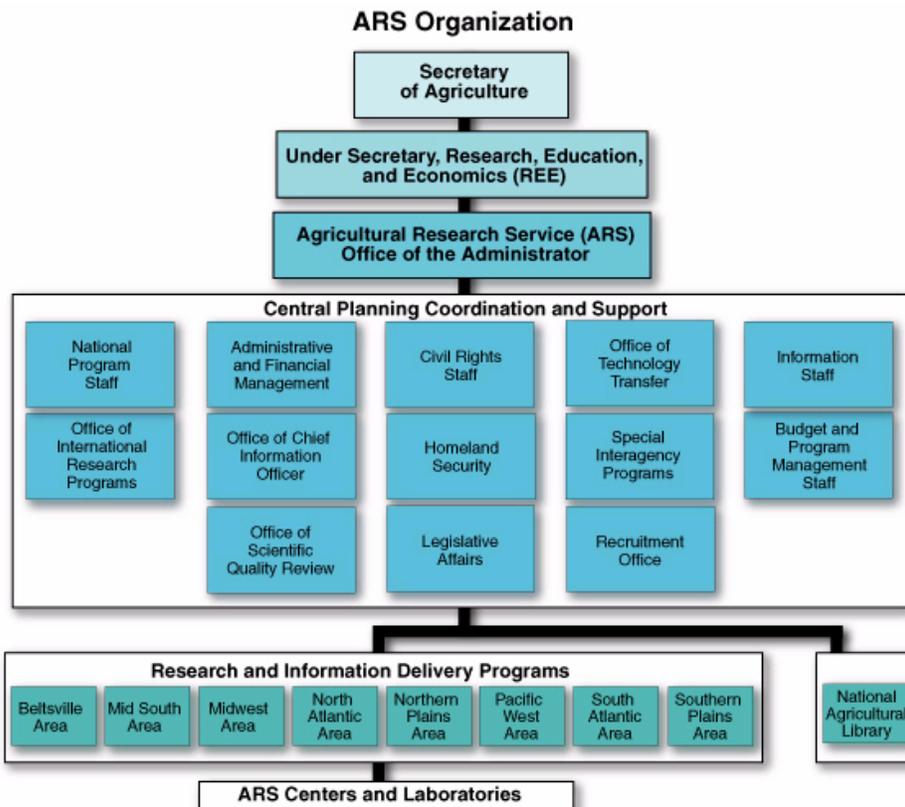
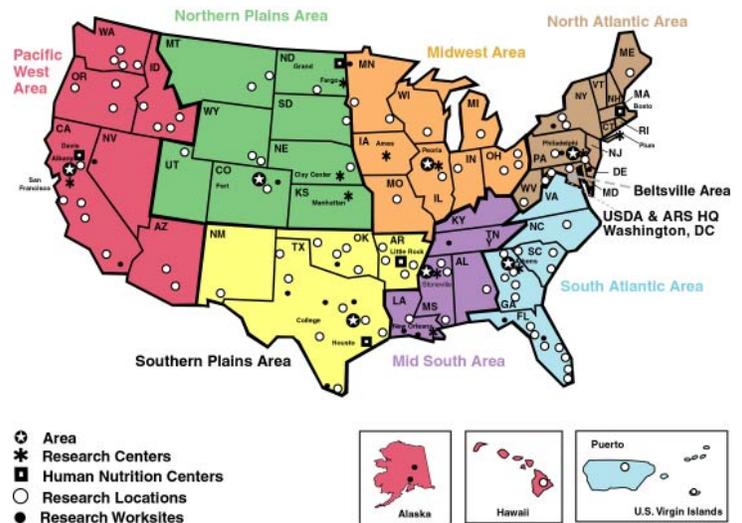


- In 1981, developed method for vaccinating embryos of chickens (*in ovo*) against Marek's disease by inoculating eggs, demonstrating for the first time that resistance to disease could be established by that method.
- In 1984, developed the first transgenic farm animal.
- In 1987, discovered that boron is a nutritionally necessary trace mineral (<http://www.ars.usda.gov/is/timeline/nutrition.htm>).
- In 1991, patented new soybean inoculant, a live, nitrogen-fixing bacteria, which increased soybean yield up to 2.9 bushels per acre (<http://www.ars.usda.gov/is/timeline/soy.htm>).
- In 1995, revised the Universal Soil Loss Equation (<http://www.ars.usda.gov/is/timeline/soil.htm>).
- In 2000, the major human allergen in soybean seed was successfully suppressed by sequence-mediated gene silencing in transgenic soybeans (<http://www.ars.usda.gov/is/timeline/soy.htm>)

II. ARS STRUCTURE

Introduction

Research at ARS is organized into 22 National Programs. The research is conducted by over 2100 scientists that are members of approximately 280 [Research Units](#) (RUs) located in 100 locations throughout the U.S. ARS employs matrix management to oversee the Agency, with the [Office of the Administrator](#) (OA) having responsibility for program formulation, direction, management, and administration; the [National Program Staff](#) (NPS) providing programmatic guidance and research direction; and eight [Area Offices](#) (AO) having responsibility for the implementation and day-to-day management of the research. There are also several additional support functions that together comprise the overall structure of ARS (See ARS organizational chart(s) below and [Appendix 1](#)).



Office of the Administrator (OA)

The Office of the Administrator (OA) oversees the program formulation, direction, management, budget, and administration in the Agency. The OA is responsible for liaisons with Departmental officials and works closely with other Agency leaders. The Administrator also serves as a spokesperson for the Agency, including meeting and working with ARS customers, stakeholders, and partners. Two important meetings for conducting ARS business are the Operations Staff Meeting and the Administrator's Council. These two meetings provide a forum for making key decisions under the direction of the Administrator and Associate Administrator.

Operations Staff Meeting

The Administrator leads the Operations Staff, which includes: the Associate Administrator; the Deputy Administrator (DA), NPS; the Associate Deputy Administrators (ADA), NPS; Deputy Administrator of Administrative and Financial Management; Chief Information Officer; Special Assistant to the Administrator; Director of Budget and Program Management Staff (BPMS); Director of Information Staff; Director of Civil Rights; Legislative Affairs Analyst; Assistant Administrator for Office of Technology Transfer and Director of Homeland Security; Director of the Office of International Research Programs; and the Scientific Quality Officer from Office of Scientific Quality Review. The [ARS Homepage \(www.ars.usda.gov\)](http://www.ars.usda.gov) provides links to these Offices and Programs (www.ars.usda.gov/offices.html) within ARS.

Currently held on Tuesday mornings, the Operation Staff Meeting is the forum where the Administrator is advised of issues of importance to the Agency and where many key decisions are made. The following actions require formal decisions memoranda in advance of the meeting:

- Scientist redirected transfers from one location/duty station to another,
- Naming or renaming of a research unit,
- Organizational changes that involve changes in [Mode Codes](#),
- Emergency funding requests, and
- Other decisions of similar importance.

Items to be considered by the Operation Staff should be sent to the Program Analyst, Office of the Deputy Administrator, NPS.

Administrator's Council

The Administrator's Council (AC) is established by the Administrator to provide a forum for communicating among the Area Offices, NAL, and Headquarters. The AC is chaired by the Administrator and is comprised of the following:

- Administrator
- Associate Administrators
- Deputy Administrators of AFM and NPS
- Associate Deputy Administrators of NPS

- The Assistant Administrator for Office of Technology Transfer and Director of Homeland Security
- Area Directors
- The Director of the National Agricultural Library
- Director, Budget and Program Management Staff
- Director, Information Staff
- Director, Office of Civil Rights
- Chief Information Officer
- Director, Office of International Research Programs
- Administrator's other senior advisors including the Senior Legislative Affairs Analyst and the Special Assistant to the Administrator



The AC meets quarterly for general and executive sessions. The purpose of these sessions is to keep the AC informed on matters important to the Agency and to gain input from the AC on these matters. Decisions on policy and other items are made during these meetings. Action items are produced and assigned to responsible parties. The general sessions of the AC are open to any interested party, while the executive sessions are attended by the AC principals, with others invited as specialists on topics to be considered. Periodically, the Administrator will call a special session of the AC where

the purpose is specific and usually entails program planning or visioning. These sessions are typically closed.

National Program Staff (NPS)

The National Program Staff (NPS) is responsible for managing the overall ARS research programs. To achieve this objective, NPS identifies critical problems affecting American agriculture, plans and executes the strategies needed to address them by: mobilizing resources (both human and financial), fostering multidisciplinary research, lining research to program and policy objectives, and communicating and interacting with customers, stakeholders, partners, and beneficiaries to insure program relevancy. Currently, NPS has organized ARS research into 22 National Programs which are described in detail the NPS website <http://www.nps.ars.usda.gov> also works to ensure the timely transfer of new knowledge and technologies to potential users. NPS seeks to broaden public understanding of the value of agriculture and agricultural research to ensure the primacy of the U.S. agricultural enterprise in the 21st century.

National Programs are managed by 33 National Program Leaders (NPLs), who are supervised by three Associate Deputy Administrators (ADAs) and the Deputy Administrator (DA) of NPS. NPLs have direct responsibility for ensuring that the research conducted at ARS is relevant to the needs of our Nation, customers, partners, and stakeholders. Working as a team with line management, NPLs support ARS scientists to ensure research is conducted with the highest standards of quality and will have impact at the National level. A Program Planning Advisor and Program Analyst report to the DA and manage program policies and the [Agricultural Research Information System](#) (ARIS), respectively.



ARS National Programs

Animal Production

Food Animal Production
 Animal Health
 Veterinary, Medical, and Urban Entomology
 Animal Well-Being and Stress Control Systems
 Aquaculture
 Human Nutrition
 Food Safety (animal & plant products)



Natural Resources

Water Quality & Management
 Soil Resource Management
 Air Quality
 Global Change
 Rangeland, Pasture & Forages
 Manure & Byproduct Utilization
 Integrated Agricultural Systems



Crop Production

Plant, Microbial & Insect Genetic Resources, Genomics, and genetic improvement
 Plant Biological & Molecular Processes
 Plant Diseases
 Crop Protection & Quarantine
 Crop Production
 Quality & Utilization of Agricultural Products
 Bioenergy & Energy Alternatives
 Methyl Bromide Alternatives



Area Office (AO)

ARS has eight Area Offices (AO) with responsibility for the implementation and day-to-day management of our research programs. Each AO has an Area Director (AD), an Associate Director, Assistant Director, and support staff to oversee the management of ARS systems and operational procedures. Area programs and contact information can be accessed as follows.

[Beltsville Area](#)

Director, **Phyllis Johnson**

BLDG. 003, RM. 223, BARC-WEST

Beltsville, MD 20705

(301) 504-6078

(301) 504-5863



[Midwest Area](#)

Director, **Adrianna Hewings**

1815 NORTH UNIVERSITY STREET

Peoria, IL 61604

(309) 681-6602

(309) 681-6684



[North Atlantic Area](#)

Director, **Wilda Martinez**

600 EAST MERMAID LANE

Wyndmoor, PA 19038



(215) 233-6593

(215) 233-6719

Pacific West Area

Director, **Antoinette Betschart**

800 BUCHANAN STREET

Albany, CA 94710

(510) 559-6060

(510) 559-5779



Northern Plains Area

Director, **Wilbert Blackburn**

2150 CENTRE AVENUE

BUILDING D, SUITE 300

Fort Collins, CO 80526

(970) 492-7057

(970) 492-7065



Southern Plains Area

Director, **Charles Onstad**

7607 EASTMARK DRIVE, SUITE 230

College Station, TX 77845

(979) 260-9346

(979) 260-9415



Mid South Area

Director, **Edgar King**

P.O. BOX 225

Stoneville, MS 38776

(662) 686-5265

(662) 686-5459



South Atlantic Area

Director, **Sudhir Narang**

950 COLLEGE STATION ROAD

Athens, GA 30604

(706) 546-3311

(706) 546-3398



Research Unit (RU)

The Research Unit (RU) is the organizational working component at ARS, consisting of a research laboratory managed by a [Research Leader](#) (RL). Each RU is comprised of Lead Scientists responsible for the implementation of [CRIS](#) projects, Scientists (SY) with expertise in various scientific disciplines, postdoctoral fellows, visiting scientists, and technical and secretarial support staff. A RU may be a single unit located at a Federal location, Federal land, University campus, or several laboratories that form a research center managed by a Center or Institute Director. Each RL reports to a site Director or, in the case of single units, directly to an Area Director (AD).

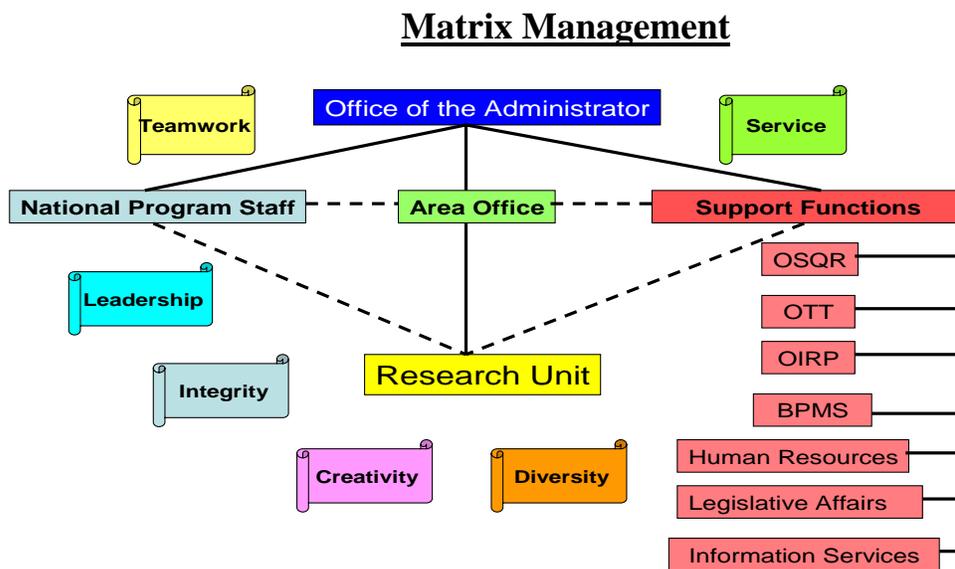
Matrix Management

ARS uses a matrix management system to provide both programmatic guidance and line management. Matrix management is essential to effectively manage a complex research organization with research laboratories located throughout the U.S. The objective of the ARS management system is to have the headquarters based National Program Staff (NPS) take the lead in providing the programmatic vision, long term strategic plans, and specific research direction to the ARS scientists working within each National Program.

Responsibility for implementing the research projects in each National Program, day-to-day management of each research unit, and ensuring that quality research is conducted within the parameters established by the National Programs, falls to the Area Directors (ADs) and the line management structure they oversee. Although NPS and line management have a lead responsibility for different phases of the implementation process, it is only when both parties work in close consultation with each other that the true value of matrix management is achieved. Matrix management in ARS relies on teamwork, innovation, respect for people, integrity, and customer focus. To succeed, this approach relies on a clear understanding of program goals and the roles and responsibilities of the different functions of our organization. Matrix management at ARS works because there is:

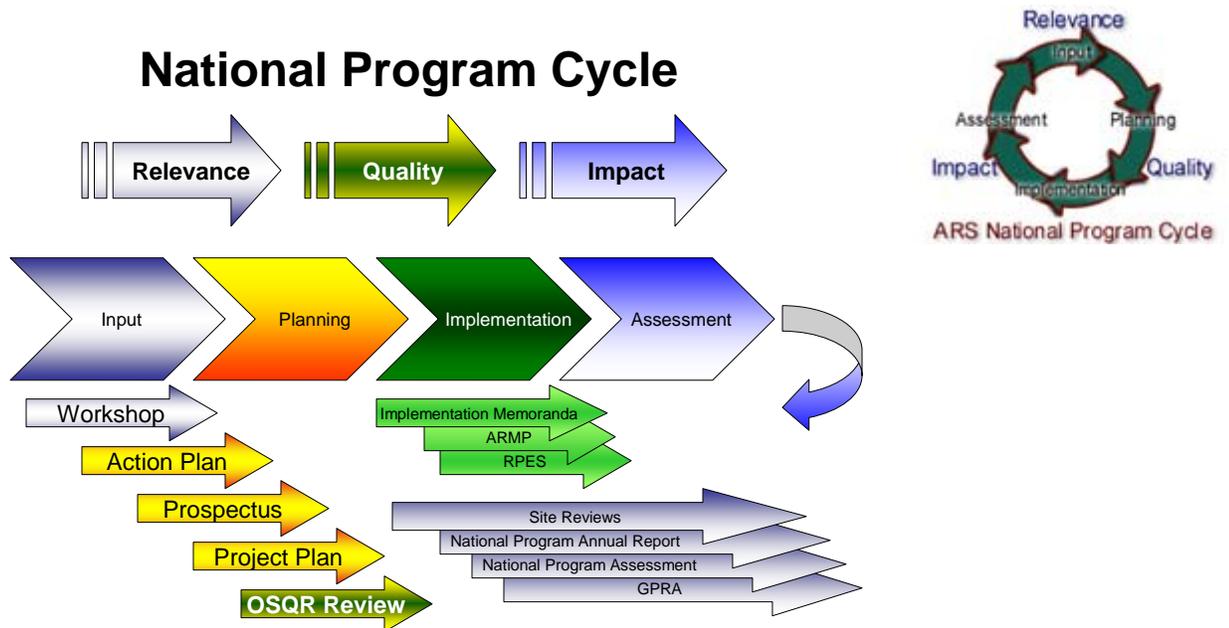
1. An understanding of the vastly differing roles of the NPS and the Area Offices and an effective open and continuous line of communication,
2. Mutual respect among all participants and a commitment to a team approach to problem solving,
3. Continual engagement and resolution of key issues in a mutually satisfactory manner,
4. An intuitive instinct for when and who to involve in negotiations, and
5. Patience and a high level of commitment to the process by all parties.

The document entitled “Matrix Management of ARS Research” provides a detailed outline of matrix management at ARS and can be found on the National Program Staff’s Intranet site www.npstaff.ars.usda.gov. A summary of program actions, functions, and responsibilities is provided in [Appendix 2](#).



ARS National Program Cycle

The management and execution of all ARS research programs is organized around the five-year National Program Cycle, consisting of four sequential phases designed to ensure the relevance, quality, and impact of every National Program: 1) Input; 2) Planning; 3) Implementation; and 4) Assessment.



Input

The first phase consists of seeking input from stakeholders, customers, and partners with the objective of identifying research problems that are relevant and of high National priority. Ensuring the relevance of research programs is the responsibility of the NPS.

The prime mechanism used by NPS to seek input is through the organization of stakeholder's [Workshops](#) at the start of each National Program Cycle. Further input should be actively sought by the NPS throughout the National Program Cycle, depending on the complexity and magnitude of the problems that define the National Program. Additional mechanisms available to NPLs include convening technical and commodity-specific workshops, participation in scientific professional organizations, and contributing to Federal interagency working groups.

Planning

The second phase of the National Program Cycle includes the development of an Action Plan, Prospectus, and Project Plan.

The NPS defines the National Program and provides broad scientific direction to ARS scientists through the development of an [Action Plan](#). The Action Plan reflects the input obtained from customers, partners, and stakeholders during the first phase of the national program cycle. The Action Plan identifies the vision, mission, objectives, and anticipated

impact of the proposed research. Making changes to the plan during the national program cycle is acceptable to accommodate emerging issues or new problems of high National priority.

ARS ensures the quality of research programs through a prospective review of the proposed research for the next 5 year cycle. The administration of the process is the responsibility of the [Office of Science Quality Review](#) (OSQR). The first step in the OSQR process is the preparation of a [Prospectus](#), which identifies proposed research objectives that are responsive to the Action Plan. The Prospectus is prepared by the lead scientists in collaboration with the Area Office and NPS. The NPS has responsibility for ensuring that the proposed research is consistent with the direction provided in the Action Plan. The next step consists of preparing the [Project Plan](#), which describes in detail the proposed research. All Project Plans are assessed by an OSQR review panel and must be deemed feasible prior to implementing the research.

Implementation

The third phase is the implementation of the Project Plan. The implementation of the research is usually assigned to a single Research Unit but may involve two or more Research Units depending on the scope and expertise needed to carry out the research. New funds made available yearly through the [President's budget](#) (Program increases and Congressional Supplemental/Add-On) are directed by the NPS through an [Implementation Memorandum](#). The Area Director is responsible for the development of the research budget, which is executed through the [Annual Resource Management Planning](#) (ARMP) process. The Research Leader (RL) develops or updates Form AD-416 (Research Resume) and Form AD-417 (Classification of Research) associated with the project. Line management, including Laboratory Director/Center Director and Area Director oversees the quality of the research being conducted. The RL is responsible for all issues involving personnel management, resource management, health and safety, and property management. Technology transfers, patents, and copyrights are coordinated between the Research Unit, Area Office, [Office of Technology Transfer](#) (OTT), and NPS. Research output and impact is documented by completing Form AD-421 (Research Progress Report).

Assessment

The last phase consists of a series of retrospective assessments to evaluate the performance of the National Program. All components of the National Program are subject to a comprehensive evaluation, including the performance of individual scientists, Research Units, Research Sites, and the impact of the National Program.

The Annual Employee Performance Review is used to ensure the quality and productivity of the research conducted by each scientist and to ensure the research is directed at obtaining the objectives of the Action Plan and goals of the National Program. The [Research Position Evaluation System](#) (RPES) provides for review of all [Category 1](#) positions on a cyclical basis to ensure open-ended promotion potential based on the scientists personal research and leadership accomplishments. ARS performs on-site research reviews to improve the current and long-range performance of a location or management unit, or when the leadership of a RU changes, a substantial number of new

scientists are brought into a project area or RU, the research program direction changes, the OSQR process indicates problems may exist with planned research, or when stakeholders/customers indicate needs are not being met.

A [National Program Assessment](#) is conducted every 5 years through the organization of one or more workshop, depending on the complexity and scope of the National Program. Workshops allow ARS to periodically update the vision and rationale of each National Program and assess the relevancy, effectiveness, and responsiveness of ARS research. The NPS organizes National Program Workshops to facilitate the review and simultaneously provide an opportunity for customers, stakeholders, and partners to assess the progress made through the National Program and provide input for future modifications to the National Program or the National Program's research agenda.

III. NPS Support

Support Staff

Administrative and program support is provided to NPLs by a service support staff and a program analyst staff, which consist of an office manager, support services assistants, secretaries, office automation assistants, program analysts, and program assistants.

Office of the Chief Information Officer (OCIO)

The Administrator of the Agricultural Research Service (ARS) established the Office of the Chief Information Officer (OCIO) in July 2000. The mission of OCIO is to provide leadership, guidance, direction, and management of the ARS information technology (IT) program to support and enhance the effectiveness and efficiency of ARS research program delivery.

OCIO provides a one-stop help desk to support all of your IT needs helpdesk@ars.usda.gov, GWCC phone: 301-504-1074; DC phone 202-720-3908. See Section IX below for exceptions, including telephone and video conferencing services). Please visit our web site for more detailed information (<http://www.ars.usda.gov/ocio>). Specifically OCIO offers the following services to support National Program Leaders:

Email Support

- Installing your e-mail system and troubleshooting/ helping with your email, calendar, address book, and other related usage.
- Creating and managing email list serves to automatically update your email lists.
- Installing and assisting with remote logon so you can access your e-mail while traveling.

Desktop Support

- Repairing your computer and helping you with the usage of standard software programs.
- Supporting your hand-held computer, laptop, printer, and other standard peripheral equipment.
- Providing access to a wide range of commercial software (e.g., Microsoft=s software, ESRI=s geographic information systems software, SAS=s statistical software, and anti-virus software).
- Installing and guiding the use of Government/Department off-the-shelf software.
- Helping with the purchase of software and hardware.

Web Page Support

- Developing, posting, and hosting web pages.
- Developing and hosting Intranet.

Software Development

- Developing database and application systems.
- Enhancing and maintaining the Agricultural Research Information System (ARIS).
- Assisting with scientific models planning and management.

Training

- Providing computer training room (2-L287) facilities.
- Coordinating IT training and support.

Management Tools

- Installing and accessing the REE Directory to locate personnel in the Research, Education, and Economics mission area <http://www.ars.usda.gov/>
- Installing and accessing the Agricultural Research Information System.
- Providing electronic forms.
- Conducting IT quality assurance and quality control.
- Providing review of IT components as input to OSQR (Office of Scientific Quality Review) submissions.
- Managing software life-cycle implementation.
- Managing IT projects, risk assessment, and bench marking.

Internet and Networks

- Installing Internet connectivity.
- Providing shared network services (e.g., providing disk space to facilitate collaboration).
- Installing data circuits (e.g., providing faster connections to the Internet).

Cybersecurity

- Securing information systems, networks, and data.
- Conducting systems security audits and risk/vulnerability assessments.
- Helping with information security planning.
- Providing cybersecurity awareness training.
- Helping with information security contingency and disaster recovery planning.
- Performing computer forensics for the investigation of suspected misuse of Government information technology resources (e.g., visiting inappropriate web sites, participating in peer to peer networks, and downloading illegal software and music).

Services Provided by Other ARS Offices

- Wireless services, video conferencing, telephone, copiers, FTS billing, records management, federal register, and remote LAN dialup accounts (contact Administrative and Financial Management, 301-504-1090, for support).
- Training for management information systems such as ARIS and ARMPS (contact your NPS program analysts for support).

National Agricultural Library (NAL)

The National Agricultural Library (NAL), the largest agricultural library in the world, has been serving agriculture since 1862. NAL was established by Congress as the primary agricultural information resource of the nation, mandated to serve the citizens of the U.S., provide leadership in developing and operating a comprehensive agricultural library and information, and serve as the library of USDA. Whether as a resource for a policy-maker in charge of designing a new program; a school teacher eager to introduce a nutrition education program into the curriculum; a research or inspector needing rapid access to information about a new invasive species; a farmer thinking of converting from chemically-intensive crop production to alternative modes of insect and weed control; or a company searching for suppliers of funding and equipment for a new business venture, the Library offers a wealth of materials and services to the many thousands of customers who access NAL on any given day. In FY2002, the total volume of NAL direct customer service transactions exceeded 42 million and is expected to grow by at least 20 per cent annually for the next few years.

The Library has two physical locations, the Abraham Lincoln Building in Beltsville, and the Library's USDA headquarters Reference Center, located in the South Building. The Library is organized into four management units: the Office of the Director, which includes the Administrative Office that also supports ARS headquarters units; the Public Services Division, whose staff provide most NAL direct customer services; the Technical Services Division, responsible for the development of the NAL collection, the AGRICOLA database, and the NAL Thesaurus; and the Information Systems Division, responsible for the Library's Web site, CALS program, information technology infrastructure, and materials preservation program.

Office of the Director: *Management, Administration, and AgNIC*

The Library's Director is Peter R. Young, who joined USDA in June 2002. The Office of the Director is responsible for oversight and management of the Library program and facilities. Its NAL Administrative Office supports the Library as well as headquarters units, as described below. The AgNIC (Agriculture Network Information Center) program is also a part of the Office of the Director. AgNIC is an alliance of more than 40 institutions worldwide, including many land grant libraries, which provides linked agricultural information services via a major Web portal - <http://www.agnic.org>.

The NAL Deputy Director, Eleanor Frierson, is the NAL liaison to the National Program Staff. She may be contacted at 301-504-6780 or by email at efrierson@nal.usda.gov.

Administrative Office

Administrative support is provided by the administrative staff located at the National Agricultural Library.

Direct support is provided in the following areas:

- Travel (policy and guidance; relocations)
- Training (policies and procedures, processing of training forms)
- Personnel (processing of all personnel forms and liaison with the AFM Human Resources Division in all areas of human resources (performance appraisals and plans, awards, pay and leave, etc.)
- Financial Management (development of annual budget (ARMPS), status of funds review, reimbursable agreements, liaison with AFM Financial Management Division.
- Liaison between Program Units and AFM in the areas of property and procurement

The Administrative Officer attends mini-staff each Monday and is onsite two afternoons a week. The Budget Analyst will be onsite permanently starting in late spring.

Public Services Division: *Connecting Customers to Information*

The Public Services Division (PSD) of the National Agricultural Library is your gateway to journals, databases, promotional and other special services. NAL's PSD provides: answers to questions; copies of journal articles, books, or other special format materials for loan; and manages a unique collection of rare books and manuscripts.

- **Answering Your Questions:** PSD's experienced general reference staff can help you find answers to a broad range of questions; locate key literature; or identify individuals and organizations for referral. Contact NAL's Reference Staff by E-mail at agref@nal.usda.gov or by telephone at 301-504-5755.
- **Obtaining Copies of Books, Journal Articles, or Other Special Materials:** NAL contains an outstanding collection of information resources related to agriculture in its broadest context. Chances are NAL has in its collection the articles, books, or other special materials you might be interested in reading, seeing, or hearing no matter where the citation was discovered. For general information about borrowing materials from NAL see - <http://www.nal.usda.gov/ddsb/>. For specific information related to USDA employee services please see - <http://www.nal.usda.gov/ddsb/ddsusda.htm>
- **Specialized Information Services:**
 - Subject focused information centers have specialists who create Web based information resources, provide reference services for complex questions in their subject area, and training. Many centers exhibit at professional meetings; which can provide opportunity to promote national programs at professional

conferences. For information about NAL's information centers see <http://www.nal.usda.gov/services.htm>

- Information resources and assistance organized by National Program Areas have been compiled and used to support NPLs, scientists, and the Office of Scientific Quality Review. Browse these resources at <http://www.nal.usda.gov/ref/ars/nps.htm>.
- DigiTop provides USDA employees with full-text or content access at your desktop. This service is in its pilot year. More than 7,000 journals, databases, newsletters and other resources are available 24/7. For more information see http://www.nal.usda.gov/digitop_interim/

Technical Services Division: *the NAL Collection, the AGRICOLA database, and the NAL Thesaurus*

NAL is responsible for building a collection of the world's agricultural information as comprehensively as possible and to serve as the official repository for USDA publications. The Library disseminates records of its holdings worldwide through AGRICOLA and other databases, and staff apply their knowledge of agricultural literature and subject expertise to the development and maintenance of the NAL Agricultural Thesaurus which arranges topics in hierarchical and related structures. The NAL Thesaurus Staff continues to improve the thesaurus by adding new terminology of particular interest to USDA, incorporating suggestions from users, adding definitions and scope notes to terms for clarity, and incorporating taxonomic changes. The NAL Thesaurus is used to index the research reports in the Agricultural Research Information System (ARIS).

NAL does not coordinate or manage a surplus acquisition and distribution program for books and journals not needed in the NAL collection, however, NAL assists USDA staff, especially local ARS researchers in disposing of copies of books and journals that have been collected in an office or lab. Upon request, NAL staff help review and dispose of individual collections. In cases where NAL receives offers of donations that are not needed by the Library, potential donors are referred to the 1890 Land Grant-University libraries according to subjects of interest to them.

NAL strongly encourages ARS scientists to deposit with NAL the copies of conference proceedings, technical and research reports that they receive as a result of official business or attendance at meetings. Electronic and/or paper reprints of articles published by ARS scientists are also solicited so that they may be indexed for the AGRICOLA database. Materials donated to the NAL collection should be sent to the Acquisitions and Serials Branch, Technical Services Division, National Agricultural Library, Room 002, Beltsville, Maryland 20705.

Information Systems Division (ISD): *the NAL IT infrastructure, CALS, and preservation activities*

Information Technology. ISD continues to enhance and expand Information Technology and related services for NAL's internal and external customers. NAL's information systems security posture has been improved with the evaluation and purchase of new technology for firewall redundancy, partial renovation of our data center, upgrades and enhancements for email and file sharing servers, an expansion of our Internet connectivity bandwidth, upgrades for our wiring infrastructure, and increased user security awareness.

NAL website. NAL's website is supported by a series of production-level Unix servers and Linux/Unix developmental servers. This system provides the public with general information on NAL products and services as well as more specialized information resources. These information resources include textual material in a number of formats (HTML-encoded, SGML-encoded, PDF files, TIFF files, etc.), graphic materials in a number of formats (JPEG, TIFF, etc.), audio, databases, and links to other relevant sites and resources.

ISIS. ISIS, a minicomputer-based integrated library system, is one of the vehicles used to provide access to and manage NAL's collection. Activities performed through this system include: acquisition of materials for NAL's and other USDA libraries' collections; serial, authority, item, and circulation control; online access and Web Gateway; cataloging; document delivery; indexing; and the production of the AGRICOLA file. The current configuration accommodates over 150 onsite users and an unlimited number of remote users that include USDA employees, those of cooperating institutions, and the general public.

CALS. The Current Awareness Literature Service (CALS) is a Selective Dissemination of Information (SDI) service that caters primarily to ARS researchers and administrators. CALS staff work with individual researchers to develop search strategies in order to locate appropriate bibliographic citations in the scientific literature. Search strategies are run monthly on a Unix system against the most current updates of AGRICOLA and select Current Contents editions and then automatically sent to clients by E-mail. Weekly searches are run against the following six editions of Current Contents: Agriculture, Biology & Environmental Sciences; Social & Behavioral Sciences; Clinical Medicine; Life Sciences; Physical, Chemical & Earth Sciences; and Engineering, Computing & Technology. For ARS researchers, Current Contents Connect ® also is accessible using a Web interface. AGRICOLA is available to all for free on the Web at <http://www.nal.usda.gov/ag98>.

Preservation Activities. NAL is leading a Department-wide initiative to develop a strategy for preserving USDA digital publications. The NAL Director chairs a national steering committee composed of USDA mission areas, the agricultural research community, USAIN, the research library community, agribusiness, and federal stakeholders. The committee has developed guidelines for USDA agencies producing digital publications, which included a metadata template. These guidelines will inform agencies on how to produce digital publications in a manner that makes both their preservation and access possible. The guidelines and metadata template has been sent to

the USDA OCIO for approval. Presently, the committee is evaluating the draft ISO standard for an Open Archival Information System (OAIS) Reference Model. NAL provides ongoing support to the United States Agricultural Information Network's National Preservation Program for Agricultural Literature (NPPAL) through a cooperative agreement with Cornell University to undertake specific activities to move the program forward. In support of the NPPAL, NAL digitally reformats and preserves historically significant federal agricultural literature. The *USDA Yearbook of Agriculture* has been digitized according to best preservation practice developed at NAL. Current efforts are directed at making the *USDA Yearbook of Agriculture* available online. Also, NAL serves as the national agricultural literature archive and has received 1,839 reels of master negative film from the national microfilming projects to date.

Administrative and Financial Management (AFM)

AFM provides service to the Administrators and employees of the Agricultural Research Service (ARS), the Cooperative State Research, Education, and Extension Service (CSREES), the Economic Research Service (ERS), and the National Agricultural Statistics Service (NASS). Our mission is to work in partnership with these agencies, their customers and partners, and the public to meet their administrative and needs and interest through delivery of responsive and effective services. Each AFM Division has unique roles and responsibilities and the following information is provided to describe for each Division what the National Program Leader (NPL) needs to know about the Division, the services provided to the NPL, and how the NPL can work with the Division to promote financial management their program.

Extramural Agreements Division (EAD)

The Extramural Agreements Division (EAD) is the Agency's primary source of information for all aspects of the ARS Extramural Research Program and serves as business manager for the NPL's extramural projects. We provide authoritative advice and guidance with regard to ARS policy and procedures on all types of agreements, i.e., Specific Cooperative, Grants, Trusts and Reimbursable, and Memoranda of Understanding. EAD has a dedicated staff person to provide direct operational agreements support to NPS.

What services does EAD provide to NPLs?

We provide professional advice to NPL's on the legal, financial, and regulatory aspects of the extramural program. EAD assists the NPL in developing statements of work and budgets for grants and cooperative agreements and conducts negotiations on behalf of the NPL and the cooperator. We ensure all agreements executed for the NPL are in compliance with Federal statutes, regulations, and ARS policies. We award and administer all NPS extramural agreements. EAD also provides training for ARS and REE personnel engaged in the extramural agreements process. For more information about EAD, please visit our web site: <http://www.afm.ars.usda.gov/ead/index.htm>.

How can NPLs work with EAD to promote their national program?

NPLs can best work with EAD by contacting us at the earliest opportunity for assistance in developing national research programs with extramural components, and for guidance on technical aspects of administering extramural projects. The NPL's program can best be promoted by EAD specialists through their attendance at commodity group meetings, conferences, etc., to provide on-site interpretation of statutes, regulations, and ARS policy with regard to the extramural agreements program directly to the stakeholders.

Facilities Division (FD)

What does an NPL need to know about FD?

The Facilities Division (FD) provides a variety of building-related services to the REE mission area. FD consists of five branches: the Facilities Engineering Branch; the Facilities Contracts Branch; the Ames Modernization Branch; the Real Property Management Branch; and the Safety, Health, Environmental Management Branch.

FD delivers support and technical guidance for the ARS major building program, and provides expertise in engineering project management, architect-engineering (AE)/construction contract management, real property, space management, and safety, health, and environmental management. Each Area office has a similar facility operation; the difference is the size and scope of the Area delegation. Generally the Area handles Repair and Maintenance projects under \$1 million, FD handles the rest.

End products include the construction of new and renovated ARS research facilities, ARS land/building acquisition and disposal, space layout and office relocations, and a safe working environment. (One important point B FD is the responsible office for AE and construction contracting B we do not handle supplies and services. For those needs, please refer to the Acquisition, Property, and Telecommunications Division.)

FD is responsible for the management of over 12.5 million gross square feet in 3,200 buildings and structures, 400,000 acres of land, and approximately \$1.8 billion in planning, design, and construction activity.

What services does FD provide to NPLs?

The most visible part of FD to an NPL is the space management function. While the George Washington Carver Center is a USDA owned and operated facility, onsite FD staff are responsible for space assignment and utilization, office design and layout, system furniture acquisition, office relocation coordination; and space alteration, repair, and maintenance.

FD is also the responsible office for developing design and construction estimates for new facilities. Frequently stakeholders are interested in supporting new facilities for ARS and will contact either the NPL or the RL for cost data. FD is the only office

authorized by the Administrator to develop and provide that information. For more information on FD, please visit our web site: <http://www.afm.ars.usda.gov/fd/index.htm>.

How can NPLs work with FD to promote their national programs?

The most effective method of promoting your program would be to get involved in any and all major building initiatives affecting your area of responsibility. On every major design and construction project an Action Plan/Fact Sheet is developed that specifically identifies a National Program Staff Representative - the NPL. The NPL serves as the Agency's principal representative regarding the locations current and projected research mission, program, and staffing levels.

Frequently FD is tasked, by either the Administrator or Congress, to conduct a feasibility study for a new or renovated facility. Since FD does not always understand the science, this is an opportunity for the NPL to put their program in the spotlight - to let their stakeholders and Congress know the value of their work.

Human Resources Division (HRD)

What does an NPL need to know about HRD?

The Human Resources Division (HRD) provides a full range of human resources services to our customers, the REE mission area agencies: Agricultural Research Service (ARS); Cooperative State Research, Education, and Extension Service (CSREES), Economic Research Service (ERS); and National Agricultural Statistics Service (NASS). The major program areas include, but are not limited to: Position Classification, Employment, Personnel Action Processing, Pay & Leave, Training & Employee Development, Family/Work Life, Performance Management, Employee Recognition, Ethics, Employee Relations, Labor Relations, and Retirement & Benefits. These services are available to all ARS employees, including National Program Staff (NPS) employees.

What services does HRD provide to NPLs?

While not all inclusive, the following highlights human resources services that are available to NPLs:

Position Descriptions and Classification

All ARS employees must be assigned to a position description (PD), which is the official record of the major duties and responsibilities assigned by the supervisor. The supervisor is responsible for defining and assigning your work, writing the position description, and periodically reviewing it to ensure that it is still complete and accurate. The classification system is dictated-by-law, in order to provide assurance of equal pay for substantially equal work. While the supervisor is responsible for developing the position description, HRD specialists are responsible for designating the position title, occupational series, and grade level

based on application of approved Office of Personnel Management (OPM) classification standards.

The typical full performance level of NPL positions in NPS is the GS-15 level. The Senior NPL Evaluation Process was established to better recognize and reward the NPLs whose work has clearly exceeded the GS-15 level. This is a highly competitive process, and only the most deserving NPLs whose leadership has had a major impact on American agriculture, the U.S. economy, and the field of science will meet the criteria for Senior NPL. The panel review can result in designation as a “Senior” National Program Leader. A promotion to Senior Level (SL) is dependent on the recommendation of the Deputy Administrator, NPLs, and the availability of an SL slot in USDA.

For budget purposes, all ARS positions are categorized into one of nine position categories. Category 1 (research scientists) and Category 4 (service scientists) are often referred to as SY (Scientific Year) positions. A summary of the ARS position categories can be found in [Appendix 9](#) or at <http://www.afm.ars.usda.gov/hrd/classification/catcodes.pdf>.

Recruitment and Employment

HRD administers the employment and staffing program for ARS and the other REE agencies. The vast majority of ARS positions are in the competitive service. While managers have substantial latitude in which sources may be considered in filling a position, all placement decisions must be based on merit (job-related) criteria. The “DEMO” authority is the primary mechanism for considering candidates currently not employed in competitive service positions with the Federal Government. This authority is unique to ARS and the Forest Service and provides flexibilities, which are not available to other Federal agencies.

Ethics and Employee Standards of Conduct

NPLs must maintain a high degree of ethical standards, both in and out of the work place. This is true not only because it is the law, but also because a positive public image should be of the utmost importance to all Federal employees. In ARS, as in any other organization, certain rules and regulations have been established to guide employees in their conduct as public servants. Each employee is expected to become familiar with these regulations and adhere to them. The Employee Standards of Conduct may be referenced at www.afm.ars.usda.gov/hrd/ethics/stdexe.htm.

Probationary Period

All new Federal employees on career-conditional appointments to a position other than a research scientist are required to serve a probationary period of 1 year. Research scientists in ARS hired under the DEMO authority serve a 3-year probationary period.

This allows the supervisor an opportunity to fully consider the individual's fitness for the job and to determine whether the individual should stay in it.

Performance Management

Performance Management refers to the development of performance plans and the appraisal of employees. Performance plans include job elements, which are based on duties of the position and a standard of performance described at the Fully Successful level. The Performance Appraisal is the comparison of an employee's performance of duties and responsibilities against the established performance standard. All employees, except temporary students, should be rated on an annual basis. Within ARS, the following rating cycles apply:

NPLs, Research Scientists, Service Scientists, and Specialists:
January 1 – December 31

Support Scientists, Technicians, Wage Grade, Secretarial/Clerical:
April 1 - March 31

Please see Section XIII of this manual, "NPL Performance Standards and Documentation," for guidance on managing your performance.

Employee Recognition

All ARS employees are eligible for awards. Awards are used to recognize and reward employees for their performance and for their specific contributions, accomplishments, and/or achievements. In addition to being a potential recipient of an award, NPLs are encouraged to nominate scientists for recognition as appropriate.

For more information on HRD, please visit our web site:
<http://www.afm.ars.usda.gov/hrd/index.htm>.

How can NPLs work with HRD to promote their programs?

Category 1 research scientists in ARS are classified through the Research Position Evaluation System (RPES) and have unlimited promotion potential since the final grade level determination for their position is influenced by the impact of the individual's work on science/technology. A peer-panel review of each scientist's position is made on a cyclical basis to evaluate the impact the individual has had in his/her area of research and to determine the current grade level. More information on RPES can be found at <http://www.afm.ars.usda.gov/rpes>.

NPLs are frequently tasked to review new position descriptions for research scientist positions to assure that the description is consistent with the research goals of the unit and to assure that it is

consistent with national priorities. In conducting this review, NPLs should assure that the appropriate national program is reflected in Factor I of the position description. Additionally, NPLs are frequently one of the RPES in-depth reviewer contacts. ARS has placed increased focus on the recruitment of Category 1 and Category 4 scientists, which has resulted in an increase in total SY employment from about 1860 in FY 1998 to over 2100 currently. NPLs have an important role in the SY recruitment process as scientific recruitments will be cleared by the NPL on two occasions; the position description must be reviewed by the NPL before recruitment and tentative SY selections are cleared by NPLs. In conducting these reviews, the NPL needs to be aware of the time sensitivities particularly on selection reviews as the candidates are often considering opportunities with other organizations. NPLs will also occasionally be consulted by Research Leaders or Area management for inputs when making a retention decision on a new scientist.

Acquisition, Property, and Telecommunications Division (APTD)

What does an NPL need to know about APTD?

The Acquisition, Property, and Telecommunications Division (APTD) maintains Head of Contracting Activity (HCA) responsibilities, delegations of authority, and ratifications. In addition, the APTD mission focuses on providing acquisition, policy, personal property, and telecommunications support. APTD consists of the Acquisition Branch (AB), the Policy Branch (PB), the Telecommunications and Management Services Branch (TMSB), the Property and Support Services Branch (PSSB), and the REE Competitive Sourcing Program Office (CSPO), with oversight provided by the Office of the Director. For more information about APTD, please visit our web site: <http://www.afm.ars.usda.gov/ppd/index.htm>.

Financial Management Division (FMD)

What does an NPL need to know about FMD?

FMD provides a variety of accounting, financial management, and travel services to the REE Mission Area. FMD consists of 4 branches: the Appropriation Level Management Staff (ALMS); the Foundation Financial Information System (FFIS) Operations Branch (FFISOB); the Fiscal Operations Branch (FOB); and the Travel and Relocation Services Branch.

FMD provides oversight, support, and technical guidance for the ARS Annual Resource Management Planning (ARMP) process. FMD delivers financial support and tracking for Agency Discretionary Resources such as Special Repair and Maintenance, Hazardous Waste Cleanup, and Salary Lapse, as well as the Buildings and Facilities no-year funding. We also

provide accounting, financial management, and fund status services for the Headquarters' Program Management units including the foreign labs, and Administrative and Financial Management units. Additionally, accounting services are provided to the 4 REE agencies, and financial management and fund status services are provided to the Cooperative State Research, Education, and Extension Service (CSREES).

What services does FMD provide to NPLs?

In conjunction with the NAL/HQ-PM Administrative Office, FMD provides fund status and travel services for NPLs. Specifically, FMD maintains fund balances for appropriated and non-appropriated funds, executes interagency agreements, and supports domestic and foreign travel, as well as relocations. In support of program reviews, FMD maintains and can provide detailed ARMP data for all Areas and the National Agricultural Library. For more information on FMD, please visit our web site: <http://www.afm.ars.usda.gov/fmd/index.htm>.

How can NPLs work with FMD to promote their programs?

NPLs can work with FMD to ensure smooth financial support of their programs by identifying and communicating the funding or travel issues early in the planning stages. If NPLs are working with other organizations to negotiate an agreement that brings in funding to ARS or obligates ARS funding, communicating those issues with FMD, through the NAL/HQ-PM Administrative Office, early in the process will allow us to tailor our services to most efficiently and effectively meet the Agency's and NPL's needs.

Also, support of NPL program areas may involve foreign travel. With the current environment, there are new requirements to ensure the safety of Federal travelers and arrangements for foreign travel requires extra time. The greater the lead-time provided on foreign travel plans, the less chance and opportunity for problems to occur. NPLs should work with the NAL/HQ-PM Administrative Office as soon as a foreign trip is identified, to ensure that the paperwork is initiated as early as possible. The Travel and Relocation Services Branch, FMD, will provide any assistance needed to ensure that all requirements are met and the travel can take place as scheduled.

Civil Rights

It is ARS policy to provide equal opportunity in employment for all persons and to prohibit discrimination on the basis of race, color, religion, sex, national origin, political affiliations, marital status, age, or physical or mental handicap. Federal regulations require agencies to provide regulations governing the acceptance and processing of complaints of discrimination which are based on race, color, religion, sex, national origin, physical or mental handicap, or age.

References:

Directive 463.1 - Employee Appeals to the Merit Systems Protection Board (4/13/81)

Directive 463.2 - Employee Grievances (2/15/91)

Directive 463.3 - Discrimination Complaints Processing (4/20/81)

Directive 463.4 - Disputes Resolution on Performance Appraisals for Performance Management Recognition Systems Employees (11/5/90)

Point of Contact:

Ms. Korona I. Prince, Director
USDA, ARS, Civil Rights Staff
1400 Independence Avenue, SW.
Room 321-A, Whitten Building
Washington, D.C. 20250-0304
Telephone: (202) 690-2244
Fax: (202) 690-0109
E-Mail: kprince@ars.usda.gov



Current Research Information System (CRIS)

The CRIS System

CRIS is the USDA's documentation and reporting system database for ongoing agricultural, food and nutrition, and forestry research. CRIS contains over 30,000 descriptions of current, publicly supported research projects of the USDA agencies, the State Agricultural Experiment Stations, the State land-grant colleges and universities, State schools of forestry, cooperating schools of veterinary medicine, and the USDA grant recipients.

Mission

The mission of CRIS is to document the research activities of the USDA/State agricultural research system for various reporting purposes, as well as to provide ready access to information that can help users to:

- Keep abreast of the latest developments in agricultural and forestry research
- Plan for future research activities
- Avoid costly duplication of research
- Establish valuable contacts within the research community

Participants

USDA

Agricultural Research Service (ARS)
Cooperative State Research, Education, and Extension Service (CSREES)
Economic Research Service
Foreign Agriculture Service
Forest Service
Natural Resources Conservation Service
Rural Business-Cooperative Service

State Institutions

State Agricultural Experiment Stations
1862 Land Grant Institutions
1890 Land Grant Institutions and Tuskegee University
1994 Land Grant Institutions (Tribal Colleges)
Cooperating Schools of Veterinary Medicine
State Forestry Schools

Project Description

A CRIS project documents a three-to five-year research activity at a single location. The research focuses on a clearly definable problem, a manageable phase of a larger problem, or a few closely related elements of a broad-based research program. Each project includes information on:

1. WHAT is being done
2. WHO is doing it
3. WHERE it is being conducted
4. WHEN it is performed
5. PROGRESS achieved
6. IMPACT expected
7. PUBLICATIONS produced

The CRIS home page can be accessed at <http://cris.csrees.usda.gov/Welcome.html>.

Agricultural Research Information System (ARIS)

The Agricultural Research Information System (ARIS) is the key program management information system or database specifically designed for ARS. The system enables project documentation and the retrieval of information and reports from approximately 1,100 intramural (in-house) appropriated research projects, as well as approximately 3,000 extramural research projects. In addition, ARIS holds information pertaining to Inventions, Patents, Manuscript Approvals, Foreign Travel, and the Administrator's Research Associate Program. ARIS as well as a manual with instructions can be accessed at <http://www.npstaff.ars.usda.gov>.

Listed below is a detailed description of what information can be found within each Subsystem in ARIS.

Research Documentation Subsystem

The Research Documentation System contains all information pertaining to every research project that is performed by ARS, including collaborations with outside institutions. Accordingly, as a National Program Leader, a great deal of information can be retrieved from ARIS that will assist you in your duties. Understanding the ARS coding system is critical to successfully retrieve information from ARIS (see **Coding of**

ARS Research Projects in Section VI of this manual and [Appendix 4](#) for additional information). There are many reports that can be retrieved from ARIS that will be helpful to you, as follows (Note: Chapter 12 in the ARIS online manual provides information and instructions on reports):

Individual Research Project Reports

Information pertaining to individual research projects can be retrieved through the Active file in ARIS. Information available on each project (Forms AD-416/417) includes: Title, investigators, objectives, approach, keywords/thesaurus, coding, location and/or performing institute, and National Program Team. Information can be retrieved and printed in a variety of ways: Forms AD-416/417 forms can be individually printed, reports can be generated and printed, output feature can be used to export to other software such as Excel, Word, and PDF file format.

Research Progress Reports

Lead scientists are required to complete **ARS Form AD-421** annually for each CRIS project and enter the information in ARIS. This information is used to prepare Research Progress Reports for each National Program annually (see **Research Progress Report** in Section VI for this manual for additional information).

Publications Report

ARS scientists are required to complete **Form ARS-115** prior to submitting a manuscript for publication and enter the information in ARS. This allows you to access information on the activities for individual scientists or research unit. See **Red Folders** in Section VI of this manuscript for additional information.

Ad Hoc Reports

Ad hoc reports allow the user to search and retrieve data from ARIS with customized query capabilities. Searching is available from all fields including text fields, code fields, dollar value fields, and percentage fields. Once data is retrieved, reports can be generated to include basic project information, project information with objective and/or approach, or prints of **Forms AD-416/417**. In addition, data can be retrieved and then exported to another software such as Excel through the Output feature.

Summary Reports

These are “canned” reports, which means they cannot be modified in anyway and are standard in format. No querying is available. Report options include: By Agency or Locations within – by SOI code, Activity code, Special code, and STP code; By Location – by SOI code, Activity code, or Special code; By Responsibility – various summaries by ADA or NPL.

Classification Detail Reports

Allows the user to search and retrieve data based on their specific needs. Options include searching by: Mode code/project number, strategic plan, subject of investigation code, sub-activity code, and special classification code. Within each option, other search criteria can be entered to specialize your results. Once the data is retrieved, report and print options are similar to those available in Ad Hoc Reports.

National Program Reports

Allows the user to search and retrieve data based on National Programs. Options include searching by: National Program, SOI within National Program, Subactivity within National Program, and Special code within National Program. Within each option, other search criteria can be entered to specialize your results. Once the data is retrieved, report and print options are similar to those available in Ad Hoc Reports.

Multiple Combination Classification Reports

Allows the user to search and retrieve data with a combination of two, three or four coding combinations. For example, all projects coded to poultry (SOI code) and e. coli (sub-activity code).

Briefing Packet

Allows the user to obtain reports at the Agency, Area, Location, Center, or Management Unit levels. No querying or customizing of reports is available within this option. Briefing packets are a good source of general information pertaining to a specific Management Unit, Location, or Area. It is a good packet of information to have for site visits, briefings, or for giving new employees information about the Management Unit and/or Agency. Some of the information obtainable in these reports include: organizational listings, personnel information, inhouse projects, current year funding, breakouts of funding by SOI, and incoming and outgoing funding summaries.

Mode Code Reports

These are “canned” reports. The options include: Current or Next FY funding by Mode Code and Funding Report with SY time. The funding (NTL and Gross) are provided by Mode Code and subtotaled by Location and Area.

Personnel Reports

These are “canned” reports. The options include: Personnel Report which shows Cat 1 & 4 SY, Cat 2’s, and total # Personnel by Mode Code/Management Unit; and Personnel MU Report which shows number of SY, as well as PFT, PPT, PIN, TFT, and TPT employees. Each report totals up by Location and by Area.

Tektran Ad Hoc Query

Tektran Ad Hoc Query allows the user to search and retrieve data from ARIS regarding **Form ARS-115s** with customized query capabilities. Searching is available from all fields on the 115. Once data is retrieved, reports can be generated to include summary reports or Tektran full reports, or prints of the ARS-115.

Foreign Travel Information Subsystem (FTIS)

The Foreign Travel Information System (FTIS) contains information regarding foreign travel to attend international meetings, work-related foreign travel and passport tracking. All nominations for ARS employees to attend international meetings and all work-related ARS foreign travel must be entered into FTIS for review and approval. Most foreign travel is approved at the Area Level. However, on a few occasions attendance at foreign international meetings is required to be approved by NPS. As of the date of this manual, the process for determining when NPS approval is required has not been defined.

The FTIS is used as a planning tool as well as a record of all foreign travel conducted by ARS employees. The following reports are available to track foreign travel: International meeting by Area Traveler, International Meeting by Country, and International Meeting by Meeting Name.

Post-Doctoral Subsystem

The Post-doctoral subsystem within ARIS is specifically used for the Administrator's Research Associate Program. Each year the ARS Administrator funds 50 post-doc proposals for a two-year period. Each year the system is open for approximately 1 ½ months for scientists to submit proposals. Once the submittal period is over, the Area Directors and NPLs rank the proposals. The top 50 are awarded by the Administrator, which includes one Edminster Awardee (best proposal).

The Post-doctoral system within ARIS holds all information pertaining to the 50 awardees for each year, including the actual proposal, mentor, post-doc hired, associated National Program, and funding received and balance available. For more information see the ARS **Administrator Funded Research Associate Program** in Section VI of this manual.

Inventions/Patents/Licenses Subsystem

The Inventions, Patents, and Licenses System is the ARS management database that resides in ARIS and is used for tracking information on inventions, patents, and licenses. Starting FY 2004, the Office of Technology Transfer (OTT) will enter all inventions, patents, CRADAs, material transfer agreements, and licenses in ARIS. This information will be retrievable for each National Program and can be used as a measure of performance and impact.

IV. NPL Interactions with Internal Customers

Introduction

Leaving the values of teamwork and service will be critical to your success as an NPL. The following internal customers provide specific functions that are integrated in our systems and processes and understanding the interactions that need to be established with these customers is essential to the organizational effectiveness of ARS.

Area Director (AD)

What does an NPL need to know about ADs?

An AD works in coordination with the National Program Staff and Administrative Management to implement the research and has direct responsibility for ensuring the quality, responsiveness, and accountability of our research programs. The ARS Strategic Plan, NPS Action Plans, and the Annual Resource Management Plans serve as a guide for carrying out the research programs of the Area.

Research Leader (RL)

What does an NPL need to know about RLs?

An RL manages the basic working unit for ARS, the research laboratory or unit. Each RL manages a staff of SYs, postdoctoral fellows, visiting scientists, technical and secretarial support staff. At some units the RL is also responsible for management of broader facilities such as animal care units, greenhouses or outdoor fields, or specialized equipment units. Each RL reports to the Area Director; at many locations there is a Center or Institute Director who is the RL's supervisor and who may want to be contacted at the same time you contact the RL. The RL is ultimately accountable for all CRIS funds that come to the laboratory unit.

As NPL, you define the areas of research that ARS needs to address, based on your NP Action Plan. The RL and SYs through their CRIS projects define the scientific research program needed to implement that plan. They expand their research efforts through collaborative agreements with other research units in ARS and in universities and industry nationally and internationally. The RL and SYs develop trusts and CRADAs, and apply for grants, to enhance their research efforts, to increase the funds and personnel available to address important research issues.

The RL is your primary local contact; he/she knows the science being performed and planned in the unit. The RL can inform you about research areas that need expansion and those that could be refocused. The RL can tell you quickly how they would address an emerging issue, who are the key contacts for specific areas, and how to spend funds to improve research and to start new collaborations to enhance their research productivity.

What services does an RL provide to an NPL?

The RLs summarize research results for you for many reports that you generate. Each year they submit an annual report to document progress on each CRIS project and associated trusts and agreements. They can provide you with quick responses to Congressional, commodity, industry and regulatory requests. The RLs should inform you when there is breaking news on their unit's scientific work or important publications in progress. The lab's SYs report research through abstracts and manuscripts using Form 115 (See [Appendix 3](#)), which you will approve if it involves a sensitive issue. They submit patent applications that are approved through the NPL and ARS Patent committees and OTT staff. The RLs and SYs are responsible for developing press releases and news notes with the Information Staff. They will be working with, and getting approval from, the NPL for these issues through appropriate ARIS documents.

RLs should be able to update NPLs on recent major developments, unanswered questions, new areas and problems surrounding their units' research area. The RLs and their SYs should know the key players in the field, the important commodity and industry contacts, and the emerging issues. They effect implementation of ARS NP Action Plans in each research area covered by their laboratory. In some research areas the RL may refer you to the CRIS Lead Scientist or to an SY for more detailed information or specific answers to your questions. RLs should invite NPLs to visit their facilities, review their research program, and meet their staff. Such visits help the NPL to understand local research capacity and potential interactions with other scientists at the location. This is a good way to get to know the RLs and their SYs. NPLs are expected to attend relevant national scientific meeting. Many NPLs will sponsor a meeting of attending ARS scientists for a general discussion of their NP and to stimulate cross unit collaborations.

The RLs know the important scientific researchers and government regulators in their field. They can assist you in making valuable connections and advise you in developing priorities. The RLs should update you on new research areas that need to be explored and new technologies that will alter the future progress of their fields. They should inform the NPL of special technologies that need to be implemented, instruments that need to be purchased, or collaborations that need to be established so that CRIS projects and the NP can be effectively advanced. The RLs help the NPL define the current and future NP Action Plan. Their research results should help formulate viable alternatives and future directions for the next Action Plan.

How can NPLs work with RLs to promote their program?

The NPL leads the national research program and develops the NP Action Plan. They promote the research agenda and look for new scientific areas, funding options and links for the RLs and SYs to advance research. The NPL represents the ARS research program at the national and international level. They help develop stronger research alliances with commodity groups and industry representatives and with regulatory and funding agencies. The NPL responds to Congressional requests for information and is responsible for developing budget initiatives for future fiscal years.

An NPL should be well informed about the research areas in their NP and related NPs. They should be knowledgeable about the full spectrum of researchers in their area and how the ARS program fits into the national and international research agenda. The NPL

should be in touch with RLs on a regular basis and seek input for developing issues. As RLs define new initiatives the NPL can work with them to improve their plans, identify customers and stakeholders, and determine how broad based an approach should be initiated. As NPLs define new research areas they can seek similar feedback from their RLs as to the best approaches and relevant stakeholders. The NPL and RL work together in developing job descriptions for hiring new SYs and for changing research emphasis of current SYs. NPLs evaluate ARS Research Associate proposals each year; their ranking is critical for approval of these limited, nationally funded postdoctoral fellow positions.

Based on their scientific knowledge the NPL should stimulate development of new research agendas and collaborations within and beyond ARS. The NPL should promote ARS research in general and their NP specifically. Working with other NPLs and the ADAs, the NPL and relevant RLs develop initiatives for the ARS national research agenda and promote and expand national and international programs.

Information Staff (IS)

What does an NPL need to know about IS?

NPLs should contact IS if they are called by the media. ARS has its own full-service Information Staff. The Information Staff has two daily news services—one in English, one in Spanish—that put out a story about ARS research projects every single day the government is open for business. At this writing, the Information Staff's news services and other electronic and fax information products have more than 7,000 subscribers in at least 58 countries, including approximately 1,000 media people (our subscribers include virtually every major media outlet, such as CNN, the New York Times, and the Wall Street Journal, to give a few examples). The English-language news service is called the ARS News Service; the Spanish-language service is called *El Servicio Noticiero*. These services are produced totally in-house, including the translations. Although we have a lot of media clients, we also have subscribers worldwide at universities, government agencies, and in industry.

In addition to the news services, the Information Staff produces English and Spanish-language websites for adults and for children; a monthly magazine, "Agricultural Research," and numerous on-line publications, such as "Healthy Animals" and "Food and Nutrition Briefs." We produce exhibits, we have a photographic staff (although they're always busy with the shoots for the magazine), we're extremely active in outreach programs, and <http://www.ars.usda.gov/is> the National Visitor Center is part of the Information Staff.

As a National Program Leader, your primary contact will probably be with the Information Staff writers. They're the people who actually write the articles for Ag Research magazine, the ARS News Service, and *El Servicio Noticiero*. Each article written by the ARS Information Staff goes through a lengthy clearance process that begins with the bench scientist and includes that scientist's research leader, center/institute director, area director, you as the National Program Leader, the Office of Technology Transfer, and an Associate Deputy Administrator—at a minimum.

So you'll be receiving draft articles from the IS writers, asking for your review. We're looking for your input as to scientific accuracy and adherence to ARS/USDA policy. However, be forewarned that these articles are not going to look like the scientific articles you're used to seeing and writing. For starters, our articles are written according to what's called "AP style," to make them acceptable to the media, and they also have to follow certain writing styles that will appeal to the media (the "inverted pyramid," the "hot lead," and so forth). Also, they have to be written in such a way that they're understandable to the average 8th-grader (that's the accepted standard for writing for the general public). So while we need you, as the NPL, to make sure the science is right, and that we're not treading on any toes as far as policy, you'll have to grant us a little leeway—you could call it "poetic license"—on writing style. Also, we need to warn you that the articles for the News Service are always very short—in the neighborhood of 300 words, and we can't really make them much longer than that, because of the media's needs and requirements.

Another area where we desperately need your assistance as an NPL: fairly quick turnaround on the clearance of these articles. The Information Staff is essentially in the "news business," and we're always "on deadline." So if we can get a story or article back from you in two or three days' time, that helps us tremendously. One point that may give you some reassurance: The article that's coming to you has already been reviewed by the scientist, the RL, the center director, and the area director.

What services does IS provide to NPLs?

Our IS writers are assigned to cover the news at specific ARS labs partly on the basis of geography, and partly on the basis of subject matter. So you'll be seeing and dealing with the same IS writers again and again. Once you've established a good working relationship with the IS writers, it can be very useful to you. IS can't write your briefing papers for you, or prepare your scientific posters...but if you've got a project where you think IS might be able to help in some way, it never hurts to ask!

Also, be sure to check out our [website](#) (yes, it's not the same as the main ARS website). You can use the SEARCH button to find past stories about your programs (a good way to learn a lot in a hurry), and the downloadable images available by clicking on the PHOTOS button make great additions to your PowerPoint presentations!

How can NPLs work with IS to promote their program?

Here's where developing a good relationship with the IS writers can really prove useful. Don't be shy about calling up "your" IS writer(s) to suggest story ideas or tell them about great research projects that you think would make good stories for Ag Research magazine. You'll need to bear in mind a few facts: The News Service items are always very short, so they're not the best place to tell the "big story"—these items are basically just "teasers" to get the media interested in the story. If you have a BIG story to tell, you want to shoot for an Ag Research magazine story—but the lead time on that is at least six months (so you'd need to talk to the writer in November/December about a story to run next June). And there's always the possibility of your writing the "Forum" that runs on the inside cover of Ag Research magazine—or, if you don't want to write it yourself,

working with "your" IS writer who will actually write the item, clear it with you—and run it with your name listed as author (don't worry, that's "legitimate" in our line of work!).

The best things you can do vis-a-vis the Information Staff to promote your program are (1) get to know your IS writer or writers, and develop a good working relationship with them, and (2) do your best to clear the writer's draft articles within a 2-3 day turnaround. Why is getting to know the writer so important? Your enthusiasm about your program will spread to that writer, and the end result is likely to be more stories about your program! And the reasonably quick turnaround will make the writer happy to work with you again in the future on other stories. Remember—these stories ***really are*** important, because getting the word out to the media about ARS' great research means getting the word out to the public and to Congress, and we all know where that can lead in terms of future funding. So please help us help you—and help ARS!

Office of Scientific Quality Review (OSQR)

NPLs play an influential role in the ARS Peer Review Process. Through this process, each ARS CRIS 5-year project plan is reviewed for scientific merit by a group of independent experts either as in a face-to-face panel meeting or several ad hoc reviews. NPLs, along with Area Office management, Research Leaders, and Institute, Center, or Lab Directors, contribute to the quality of each project plan. NPLs are specifically responsible for ensuring that each project plan demonstrates relevance to its associated National Program Action Plan. NPLs may also provide guidance to groups of research teams on their collaborations and methodology to promote an efficient use of resources and resolve overlaps and gaps among related projects. As an acting or new NPL you will be briefed on the review status of projects in your program(s) and the role you'll have towards their final implementation.

General preparation:

- Obtain a list of projects under your leadership, organized by their stage in the Peer Review Process and whether the review is an ad hoc or panel process. (Program analyst.)
- Attend a briefing on the Peer Review Process. (Office of Scientific Quality Review coordinator.)
- See Manual 500-1, *The ARS Peer Review Process*. Especially read policy sections on: roles & responsibilities, review criteria, action classes and matrix, postponement and exemptions, and steps in the process.
- Acknowledge deadlines and work to incorporate them into your schedule.

Preliminary Planning:

- Receive briefing from OSQR. Discuss overall requirements and NPS coordination for the new review session.
- Collaborate with each Area Office on projects that may need postponement or exemptions. (Your program analyst will assist you.)

- If not done already, begin coordination on the prospective objectives for each project. More than one approach may be taken, obtain advice from your ADA. Anticipate extra guidance to new or reorganized research teams.
- It is beneficial, but not required, to plan a workshop for scientists and research leaders within the first 3 months of each panel review session. Other options may be practical depending on the number of projects being reviewed (e.g., conference calls or site visits).
- Coordinate the assignment of projects to panels by their area of research, commodity, or other logical division. (Especially if more than 25 projects are in the program.)
- Develop memos to the research teams instructing them to begin writing their prospectuses. Besides the boiler-plate information required, you may consider including project specific guidance on the objectives.
- Before the deadline to start prospectuses: 1) memos are distributed, 2) list of projects postponed or exempted with approvals and rationales is submitted to OSQR and 3) list of projects assigned to panels and general list of projects approved for review (these may be combined into one format).

Prospectus Development:

- Provide guidance on relevance to NP, collaborations, and methodology to promote an efficient use of resources and resolve overlaps and gaps among related projects.
- Approve prospectuses and submit to OSQR.
- Submit suggestions for reviewers to OSQR. You may request a list of all reviewers in the OSQR's database for the subject NP. Any requests for the removal of names require a strong and convincing rationale.
- Submit formal panel chair nominations to OSQR. Your nominations become the primary source of guidance to OSQR on the selection of chairs. You are advised to seek input on the panel chair nominations from the research teams and Area Offices also.

Project Plan Development:

- Verify that the plan is in agreement with the prospectus. Scientific input is optional; if done, copy the Area Office and work to remain within the specified deadlines.
- Sign off on the plan and submit it to the Area Office.
- Provide a national program briefing to the panel chair. Would include topics such as the organization and audience of the national program workshop, typical customers of the subject research, the Agency's approach to assigning objectives to projects, and the general framework of projects/research teams and collaborations responsible for helping ARS meet the goals in the Action Plan. (Panel review process only.)

Review Period:

- Provide a national program briefing to the panel. (Panel review process only.)
- Read/acknowledge the peer review recommendations.

Project Plan Revision and Response to the Review:

- Judge whether the research team's response to the review and edits to the plan are reasonable. Copy Area on comments to the research team.
- Sign off on the plan.
- If the review resulted in a major revision or not feasible, consult with the Area Office and research team on the approaches to correcting the problems.
- Upon receiving a certification from OSQR, the program analysts will coordinate the creation of the new project that is established for the period through the next panel review session.

Long-term Planning:

- Plan to have the program's updated Action Plan completed within one year of the start of the associated panel review session.

Office of International Research Programs (OIRP)

The mission of the Office of International Research Programs (OIRP) is to enhance the productivity, effectiveness, and impact of the ARS National Programs through mutually beneficial international research collaborations. A full description of OIRP activities may be found at their web site . OIRP has three goals that are briefly described below.

1. Participate in activities that promote the strategic interest of the U.S.

government. An example of this is the OIRP-managed program with Former Soviet Union (FSU) biological warfare researchers. The program is funded by the U.S. Department of State and seeks to convert this scientific expertise to peaceful applications. Since inception (1998) and through 2003, forty-six projects have been approved that involve over 900 FSU scientists, half of which are former bio-weapons researchers. The program reduces the proliferation risk for weapons of mass destruction and supports the transition of the Newly Independent States to market economies. Moreover, all funded projects enhance ARS National Programs. NPS rates potential projects that are suggested by either FSU or ARS scientists through short pre-proposals by completing the OIRP Project Rating Form (See [Appendix 3](#)). Most often, the rating NPL also suggests the appropriate ARS collaborator. Full proposals are then jointly developed by ARS and FSU scientists, and projects are implemented by OIRP in conjunction with the salient Area Office.

OIRP also supports initiatives pertaining to the Middle East peace process. In 2003, utilizing State Department funds, an Irrigation Management Information System (IMIS) program for efficient water use in the U.S. and Middle East was established. ARS partners include the National Center for Agricultural Research and Technology Transfer (Jordan), the Palestinian Agricultural Relief Committees (PNA via Israel), and the Ahali Center for Community Development (Israel). OIRP also coordinates the U.S.-Israel Binational Agricultural Research and Development Fund (BARD). In 2002, the BARD Board of Directors approved 25 project proposals in 11 disciplines for funding at about \$300,000 each. BARD remains a cornerstone of efforts to overcome agricultural problems through sound science.

2. Facilitate international cooperation and scientific exchange. Two good examples of OIRP activities that fall within this goal are with Brazil and Mexico.

ARS and its Brazilian counterpart, Embrapa, created Labex in 1998 via a Cooperative Trust Agreement to conduct joint research. Areas of ARS research interest in Labex are defined by NPS. Specific projects are then implemented by OIRP in consultation with NPS, ARS Area Offices and Embrapa counterparts. Currently (2003), four Embrapa-Labex scientists reside in ARS facilities and one ARS-Labex scientist works in an Embrapa laboratory. Collaborations include a wide range of research topics from integrated pest management to global change to animal genomics to industrial utilization of farm commodities. Labex enhances research productivity and impact in both countries through reverse seasonal data collection, increased access to diverse germplasm, sharing of laboratory costs and stimulation of intellectual processes, among other considerations.

ARS and its Mexican counterpart agency, the National Research Institute of Forestry and Agriculture (INIFAP), have a long and productive history of cooperative research addressing technical areas that impact trade, natural resource management issues, and agricultural production problems of mutual concern. In a 2002 meeting with other Mexican research institutions, including CONACyT (Mexican equivalent of the National Science Foundation), participants identified five areas for joint research and cooperation: 1) water and environmental impact; 2) phytosanitary issues; 3) biotechnology and biosafety; 4) animal health; and 5) food safety. All five areas impact trade or the environment and are priorities in the U.S.-Mexico Binational Commission's Committee on Agriculture. These workshops will be held by the end of June 2003 to develop and enhance cooperation in an Agricultural Research, Education and Exchange Program (AREEP). NPS will be heavily involved in charting the programmatic course for AREEP.

3. Administer the ARS Overseas Biological Control Laboratories. ARS operates four Overseas Biological Control Laboratories (OBCLs) with staff located in six countries. The four laboratories are the Australian Biological Control Laboratory (ABCL) located near Brisbane; the European Biological Control Laboratory (EBCL), headquartered near Montpellier, France, with staff also located near Rome, Italy and Thessaloniki, Greece; the Sino-American Biological Control Laboratory (Sino-ABCL) in Beijing, China; and the South American Biological Control Laboratory (SABCL) located in Hurlingham, near Buenos Aires, Argentina. The overall mission of these laboratories is to find and study biological control agents for use against invasive pests of American agriculture. The main target pests are exotic weeds and insects that infest or attack rangeland, agricultural crops, public (recreation) land, livestock, and structures. Research activities fall principally under National Program 304 (Crop Protection & Quarantine). Accordingly, the NP 304 team identifies program thrusts and prioritizes target pests. OIRP then implements and administers research program in a capacity similar to that of an Area Office. Below are brief descriptions of the OBCLs.

Australian Biological Control Laboratory (ABCL). ABCL was established in 1985, with a single U.S. researcher, at the Commonwealth Scientific and Industrial Research Organization (CSIRO) Laboratory in Townsville, Queensland. The laboratory was

created to locate and evaluate potential biological control agents for two aquatic weeds. In the following year, work began on the paper bark tree, a project that continues today. ABCL moved to the Brisbane area in 1987, and two years later became associated with the USDA Aquatic Weed Laboratory in Fort Lauderdale, Florida. The laboratory benefits greatly from the collaboration with CSIRO. The research program is undertaken with a staff of 3 scientists (plus technicians), and utilizes space and facilities provided by CSIRO. The web address for ABCL is www.ars-grin.gov/ars/SoAtlantic/aust .

European Biological Control Laboratory (EBCL). EBCL is the flagship and largest of the four OBCLs, with a current total of 10 scientists, five support scientists, seven technicians and four administrative support staff. It began operation as the European Parasite Laboratory in southern France in 1919, and was later moved near Paris to be closer to air transportation facilities. In 1958, the Biological Control of Weeds Laboratory-Europe was established in Rome. The two labs were combined in 1991 to form the European Biological Control Laboratory, headquartered in France with substations in Rome and Greece. A newly constructed 1800 square meter facility with 20 laboratories and two quarantine units is located in an international agricultural research campus (AGROPOLIS) outside Montpellier, in southern France. The laboratory occupies 20 hectares and is the only fully owned ARS facility outside the U.S. The campus provides close proximity to research organizations with similar missions (e.g., CIRAD, INRA, CSIRO), facilitating collaboration. The web address for EBCL is www.ars-ebcl.org .

Sino-American Biological Control Laboratory (Sino-ABCL). The Memorandum of Understanding (MOU) that established Sino-ABCL as a joint venture between ARS and the Chinese Academy of Agricultural Sciences (CAAS) was signed in 1988. The agreement was for five years and covered five specific research proposals: Exploration for and shipment of natural enemies against i) leafy spurge, ii) aquatic weeds and iii) Russian wheat aphid from China to the U.S.; and shipment of iv) pesticide-resistant predaceous mites, and v) parasites and predators of scale insects from the U.S. to China. The formal relationship between CAAS and ARS that governs Sino-ABCL was renewed for five-year periods in 1993 and 1999 via Specific Cooperative Agreements. Sino-ABCL currently operates with 3 scientists and 5 technicians on secondment from CAAS' Institute of Biological Control Laboratory. Office and laboratory space is provided by that institute as well. Sino-ABCL produces a periodic email newsletter. Requests to be placed on the distribution list may be made through SABCL@public.bta.net.cn .

South American Biological Control Laboratory (SABCL). SABCL, originally established in Uruguay in 1940, was moved to Argentina in 1962 for exploration of natural enemies to control alligatorweed. The success of three Argentine insects in substantially reducing alligatorweed distribution in the U.S. led to the initiation of a second project, biological control of water hyacinth. Based on the success of these aquatic weed programs, the laboratory's activities were expanded in 1976. A program review in 1994 resulted in closure of biological control efforts against native American plants, and diversification into biological control of insect pests. Current facilities include two contiguous rented houses, two modular laboratories, and two greenhouses, located on approximately 2200 m² of land. SABCL has a staff of five scientists, four technicians and one administrative support person. SABCL's web address is www.usda-sabcl.org

Office of Technology Transfer (OTT)

Introduction

ARS has been delegated authority by the Secretary of Agriculture to administer the patent and license programs for the U.S. Department of Agriculture (USDA). ARS's Office of Technology Transfer (OTT) is assigned the responsibility for protecting intellectual property (utility patents, plant patents, Plant Variety Protection Certificates), developing strategic partnerships with outside organizations, and performing other appropriate activities that effectively transfer ARS technologies to the marketplace. ARS Technology Transfer Policy and Procedures are described in P&P 141.2

Structure

To accomplish this, OTT is organized into four areas. The *Administrative/Headquarters Section* conducts day-to-day operations, coordinates technology transfer policy development, and signs licenses and Cooperative Research and Development Agreements (CRADAs). Patent Advisors in the *Patent Section* assist scientists in protecting intellectual property (IP), coordinate invention reports, prepare and prosecute patent applications, and oversee any patent applications prepared by contract law firms. The nine Patent Advisors are assigned Areas and/or subject specialties; 4 are located in Beltsville, 3 in Peoria, and 2 in Albany, CA. The *Licensing Section* negotiates licenses for ARS IP and monitors license performance. The *Marketing Section* develops, implements, and coordinates targeted marketing strategies to facilitate technology transfer, distributes information on ARS technologies that are available for licensing or cooperative partnerships, provides answers to stakeholder questions on technology transfer activities in ARS, and ensures information about ARS research commercial successes is available to the public.

A function unique to the ARS Technology Transfer is that we have seven Technology Transfer Coordinators (TTCs) stationed in Area Offices who are responsible for facilitating the development and transfer of USDA technologies. They serve as liaisons between ARS, private sector and academic scientists, ARS line and program managers, university Technology Transfer partners, and management of private sector collaborators. They negotiate CRADAs, material transfer and confidentiality agreements, and some licenses. They also assist the Extramural Agreements Specialist with Intellectual Property issues in MOUs, Trust Fund/Reimbursable Agreements and Non-Funded Cooperative Agreements.

Functional Interaction with the National Program Staff

- CRADAs are agreements to document *cooperative* research between Federal scientist and university and/or private sector research organizations. ARS does not conduct developmental research so partners are sought to take the research past the discovery stage and move the technology to commercialization. As an incentive to collaborate in the commercialization process, the collaborator is given the first right of refusal to negotiate an exclusive license on intellectual property developed within the scope of

the agreement. ARS and the collaborating scientist develop a Statement of Work that is incorporated into the CRADA. The TTCs negotiate with the collaborator over any legal issues and when agreement is reached, the CRADA documents are sent to the Deputy Assistant Administrator (DAA), OTT, for approval. The DAA forwards Statement of Work and budget pages to the appropriate NPL for comment and approval. NPLs are asked to consider the CRADA in the context of (a) relevance of the project to the mission of the management unit, (b) relevance to priority of research conducted by the management unit, (c) appropriateness of resources required to conduct the cooperative research, and (d) any concerns regarding constraints or broadness of anticipated technology. OTT also requires approval from Ethics, for review of potential conflicts of interest (financial), and from line management before a CRADA is signed by the Deputy Assistant Administrator.

- When an ARS scientist believes that they have made an invention they submit an Invention Disclosure to a Patent Advisor. Five Patent Committees have been established to evaluate different technologies, similar in concept to the RPES Committees that meet at least twice a year. The Invention Disclosures are evaluated against a number of established criteria but probably the most important is to determine if patent protection is needed to transfer the technology. Because our mission is to transfer technologies to the private sector for broad beneficial public use, we pursue patents and licensing only when IP protection is essential for technology transfer. This is usually the case when further research and development (R&D) investment by the private sector is necessary to commercialize a product, and patent protection is required to protect this investment. However, ARS policy is to allow researchers and breeders to use any ARS technology freely, without a license for research purposes. If the Patent Committee determines that publication of the technology is sufficient to transfer the technology to the ultimate user they will recommend that the technology not be patented. Because the decision making process requires a broad knowledge of specific fields, NPLs are encouraged to participate in the confidential discussions when particular technologies in their area of expertise are on the docket.
- On occasion, NPS and OTT meet to discuss policy issues pertaining to the public release versus protection of plant and animal materials by ARS breeders. Because university cooperators are often involved, they will have rights to protect technologies that are jointly developed. Therefore, in the planning of research projects, consideration must be given to the scope of work required by non-ARS personnel when it is anticipated that cooperator policies and ARS policies are divergent.
- Manuscript and oral presentation approval is a line and program management decision. However, standard CRADA language precludes publication without first notifying cooperators of ARS intent to publish or release information. National Program Leaders should be cognizant of this, and when a scientist submits a request for approval, the scientists should be told that CRADA partners must be consulted prior to publication or presentation.
- In FY 2003 OTT and NPS jointly began developing systems to track Plant Material Inventions and Biological Material Inventions to supplement the existing Patent

Invention tracking system. This will allow ARS to evaluate merits of public release versus intellectual property protection (Plant Variety Protection Certificates) for new plant varieties. Also, the agency will be able to track the status of new technologies for release to private or public sectors, and will facilitate a more rapid transfer. This proposed process is currently undergoing review within ARS; implementation is pending approval.

- OTT has created a new database for Technology Transfer Coordinators that is designed to increase efficiency of implementing cooperative research efforts. This will also increase Program Managers' and Line Managers' awareness of ongoing negotiations with research partners. Such information will better coordinate these activities with other projects at the national level, provide better linkage to the 22 ARS National Programs, and meet the expressed needs of customers and stakeholders. OTT can provide data concerning agreements within NPLs program area and provide analysis useful for the budgeting process. This database is currently in beta testing, and OTT anticipates implementing this during FY 2004.

Budget and Program Management Staff (BPMS)

The current ARS budget for salaries and expenses totals \$1 billion. These funds finance a staff of about 8,600 scientists and support personnel who conduct research related to plant and animal sciences; food safety; human nutrition; and soil, water, and air sciences.

The ARS buildings and facilities budget funds the construction and repair/renovation of the Agency's laboratories and facilities. ARS laboratories are presently located at about 100 sites throughout the United States.

The Budget and Program Management Staff (BPMS) is responsible for the formulation, direction, oversight, and execution of the ARS budget (i.e., salaries and expenses, and buildings and facilities). BPMS is also responsible for analyzing and assessing the effectiveness of the Agency's programs.

The Director of BPMS reports to the Administrator. The Director represents the Administrator in explaining and defending the Agency's budget requests and program proposals with the Department's Budget and Program Analysis Office, Office of Management and Budget (OMB), and Congressional Appropriations Committees.

BPMS works with senior Agency staff, program managers, and the National Program Staff in formulating and presenting the Agency's budget. BPMS directs the formulation/presentation process: from the development of the "Agency Estimates" (ARS budget request) and its review by Department budget officials, to the preparation of the "Department Estimates" (USDA budget request) and its review by OMB officials, to the preparation of the "Explanatory Notes" (i.e., the "President's Budget"). With the submission of the President's Budget to Congress, BPMS prepares various documents including the "Witness Statement" (i.e., testimony presenting the ARS budget), in-depth reports and "questions and answers" (requested by Congress), and appropriations language changes.

Once ARS receives its appropriations, BPMS directs, oversees, and executes its allocation. Allotments and apportionments (i.e., to programs and locations) are reviewed and carried out in compliance with the Agency's program and budget plans and Congressional intent. In addition, BPMS evaluates and implements allotment adjustments or transfers between research programs and locations. BPMS is also responsible for recommendations concerning the use of discretionary funds, and preparing documentation in support of supplemental appropriations and reprogramming and transfer requests submitted to OMB and Congress.

BPMS responsibilities include monitoring and reviewing the ARS research programs to ensure that resources are being utilized in accordance with the Agency's mission and strategic plan, and the intent of Congress and the Administration. In this regard, BPMS evaluates new program fund allocations and determines whether funds are being spent on projects as directed.

Legislative Staff (LS)

What does a new NPL need to know about LS?

The ARS Legislative Staff (LS) coordinates the Agency's legislative program; serves as the focal point for the exchange of information with the Congress - primarily the House and Senate Agriculture Committees; advises on the implementation of congressional directives, and provides the ARS leadership with information on congressional activities and legislation of interest or affecting the agency. In addition, LS helps ARS locations plan events involving participation of their elected officials, and is the point of contact for the Secretary's Office of Congressional Relations and the Under Secretary for Research, Education and Economics for ARS information for or requested by Members of Congress and their staff.

If you have a legislative question or you have been asked for information from a congressional staffer, you should work with the LS. If the congressional question is budget related, you should work with the ARS Budget Office on the response. All congressional inquiries should be documented on the ARS-213 form which can be found on the Informs database or LS webpage

<http://www.ars.usda.gov/newla/index.html#Budget2003>

What does a new NPL need to know about lobbying?

There are statutory constraints on government employees in regard to lobbying. Below are some guidelines but you should become familiar with the anti-lobbying laws by visiting the REE Ethics Home Page at the following web address:

<http://www.afm.ars.usda.gov/hrd/ethics/index.htm>

Keep in mind that the brief guidelines below are in relation to the Congressionally appropriated funds and your "official duties." Improper expenditure of any amount of appropriated funds in any form – salary, equipment, supplies, etc. - constitutes a violation of the anti- lobbying statutes. You are not, however, prevented from expressing your

opinion as a private citizen, as long as you do not use your official title or other Government-related information or resources in pursuing your private activities.

Federal employees may not:

- participate in activities or campaigns which are designed to generate support for or opposition to pending legislation;
- engage in a grass roots lobbying campaign involving expenditures for telegrams, letters, and other forms of communications that directly or indirectly encourage the public to contact Congress in support of or opposition to pending legislation;
- initiate or coordinate meetings between members of the public and Members of Congress or congressional staff to discuss proposed legislation;
- “ghostwrite” letters to the editor, speeches, etc. dealing with proposed legislation for anyone in a non-Federal position; or
- provide lists of, or correspondence from, persons who favor or oppose certain legislation to groups that lobby Congress, except where the material is requested and properly made available under the Freedom of Information Act.

Federal employees may:

- discuss legislative issues with outside organizations and deliver speeches and make public remarks explaining proposed legislation and the Administration’s position on proposed legislation so long as the remarks or the activity are not designed for the purpose of advocating support for or opposition to such proposals;
- send information about proposed legislation to individuals or groups that have asked for this information, or that regularly receive information from the Department. This information may include the status of legislation and the Administration’s position on proposed legislation but may not, directly or indirectly, encourage the public to contact Members of Congress;
- tell the public how to obtain additional information regarding proposed legislation; and
- write letters to the editor, “op-ed” articles, etc. (going through proper channels) addressing proposed legislation and the Administration’s position on proposed legislation so long as the materials identify your title and position.

Political Appointees

Career members of the Federal Civil Service often have difficulty in understanding how to work with political appointees. Part of the disconnect stems from the fact that the two categories have very different roles, motivations, and time frames. Most employees come into Federal service with plans to make it their “career.” They expect to serve Administrations of differing parties and philosophies, they understand that their status was created to provide stability and continuity, and they think in long time frames.

Political appointees approach their Federal service from an entirely different perspective. Political appointees tend to be bright, Type A personalities, who have been involved in “politics” on behalf of a particular Party, politician(s), or cause for many years. Their political activity before coming into government is generally done “on top” of their

regular job/career, and is usually done without pay. At the top levels they may well have served in previous Administrations of the same party, in senior positions at the State level, and perhaps in elective office. They bring a lot of experience and expertise to their positions. The mid- and lower-level appointees have worked hard in the political vineyard and contributed to the President's election.

Presidents come into office with a philosophy, with a political agenda that was the bases of their campaign and election. They want to "move the country" in a certain direction, consistent with what they said they would do in the campaign. They want to have an "impact," they think about how history will treat them, and they want to leave a legacy. They set about creating a White House staff including OMB (which is part of the Executive Office of the President), a Cabinet, Sub-cabinet, and teams of appointees in each department and agency that will help them carry out their electoral "mandate." Presidents paint with a broad brush - they will not detail their goals for intramural agricultural research. The Secretary of Agriculture is not just the manager of the USDA, he/she is the President's ambassador to the Department and to American agriculture. The Secretary is the transmitter, translator, interpreter, and shaper of Administration policy to the career service in the USDA. The Under Secretary for Research, Education and Economics is the transmitter, translator, interpreter, and shaper of Administration policy to the career service in REE.

Political appointees see themselves as "leaders" not just "managers." They work with the career service, but they do not see themselves as part of the career bureaucracy; in fact they almost always resent a career employee trying to "behave" as though they are a "political." They average about 2 ½ years in a given position and they want to have an impact on the policy direction of the program(s), research, etc. under their jurisdiction. They want to "move the President's agenda" forward and they want to leave a legacy for themselves and the Administration. In preparing the appointees, senior level political personnel often tell them to expect resistance from the "bureaucracy." They expect to hear that the "issues are very complex" (i.e. too complex for them to understand or change), "Congress will not let us change that policy/program," the "special interest groups will not let us change that program/policy," etc.

All of these factors, differing roles, motivation, time-frame, and expectations cause career and non-career employees to talk past each other, to misunderstand each other, and to have a generally difficult time working together. Career Federal employees need to remember that they work in the Executive Branch, for the President, and it is their job to help the President implement the policies and programs that were endorsed by the American people in the previous Presidential election. The political appointees help us to understand what the President's policies and programs are. That is how our Constitutional order is designed to operate.

V. NPL Roles and Responsibilities

Introduction

NPLs are responsible for completing specific administrative functions throughout the year that enable the continuity of the national program cycle. Many of these functions are integrated in the ARS operational systems and must be completed within specific time periods. The following summarizes key functions that are critical to the many systems that ensure the organizational effectiveness of ARS.

Workshops

The program development process begins with the convening of at least one National Program Workshop for each National Program per 5-year cycle. The National Program Workshops provide a structured format for receiving input from customers, stakeholders, and partners. They are designed to define specific researchable problems aimed at meeting high priority needs within the agricultural community. The Workshops also provide an opportunity for ARS research scientists and program managers to interact and develop rapport with customers, stakeholders, partners, non-ARS scientists, and representatives from other agencies. In addition, research collaborations among Agency scientists are developed during the National Program Workshops. The National Program Leaders overseeing a particular National Program are responsible for organizing, conducting, and summarizing National Program workshops. Area Directors, Center Directors, Institute Directors, Laboratory Directors, and Research Leaders having projects within a given National Program are responsible for providing lists of people appropriate for invitation to each workshop.

Action Plan

Information received during the National Program Workshop is used by the National Program Team to develop a detailed Action Plan for each National Program. This document identifies the high-priority researchable issues identified during the program workshop and delineates mechanisms for addressing these issues. Each Action Plan provides information on the rationale for the National Program and identifies the vision, mission, goals, components, objectives, anticipated outcomes, and impacts of the proposed research. Sufficient detail must be presented in the Action Plan to provide guidance to each ARS scientist working in the National Program for developing specific project plans to address the needs of American agriculture and related industries. NPS and Area Directors work together to ensure coordination of efforts for specific problems within and across Areas. Action Plans are subject to modification as needed.

Prospectus

In accordance with the OSQR schedule, the National Program Team provides guidance in the development of research prospectuses that address the high-priority goals identified in the National Program Action Plans. Research Leaders/Lead Scientists develop a Prospectus that outlines the direction, objectives, and approaches for the research to be conducted during the next 5-year program cycle and submits it to NPS with the approval of Center/Institute Directors and Area Directors. In all cases, National Program Teams

will emphasize alignment of the Prospectus with the National Program Action Plan and identification of potential collaborative partnerships. The National Program Team reviews the completed Prospectus regarding the alignment of the document with the agreement reached between the National Program Team and the scientists assigned to develop the research project.

Project Plan

Lead Scientists/Research Leaders, Center/Institute Directors, and Area Directors assume responsibility for overseeing the development of high quality Project Plans. The Project Plans must be developed consistent with the scientific direction contained in the approved Prospectus and with sufficient rigor to withstand the peer review process. Line management is responsible for producing Project Plans that are well written, of high quality, and ready for OSQR review. National Program Leaders are responsible for ensuring that the Project Plans meet the agreed upon objectives described in the prospectuses. Following OSQR review, Area Directors and NPS resolve with the Lead Scientist/Research Leader any major issues identified by the panels. Each Project Plan is assigned a CRIS number and all activities associated with the project can be tracked through ARIS.

Research Progress Report (AD-421)

Lead Scientists prepare Research Project Reports annually for each CRIS project by completing **ARS Form AD-421**. The information is entered in ARIS and complete reports for each National Program are prepared annually. Lead Scientists are responsible for following Agency policy when preparing the report. The information included in the report is provided to assist NPS in developing reports and responding to requests for information. The reports include significant accomplishments, aggregate accomplishments for mid-term review, anticipated accomplishments for future years, and major technology transfers. Information contained in the report facilitates reporting accomplishments against the ARS Strategic Plan as required by the Government Performance and Results Act (GPRA), supports the ARS annual budget request to Congress, and provides the information for the National Program Annual Report. Reports are submitted to NPS for review and approval and are finalized in August. NPS is responsible for submitting the reports to the Deputy Administrator. The reports are posted on the ARS web site annually in February.

Status of Program (Green Sheets)

The Status of Program is a written, brief, factual statement of selected examples of the most significant recent research progress and accomplishments during the past 12 months. Significant accomplishments (green sheets) are identified annually in support of the ARS annual budget request to Congress and are included in the Explanatory Notes (see **Development of the President's Budget** in Section VII of this manual for additional information). Instructions for preparing Status of Program green sheets are provided in [Appendix 5](#).

National Program Annual Report

The NPL prepares an annual report to communicate to customers, partners, and stakeholders major accomplishments within their National Program. The information

provided in the report is derived from the Annual Project Report (AD-421) and additional information available to the NPL through the management of their National Program. The report is posted on the ARS web site annually in February.

National Program Assessment

Each National Program is reviewed every 5 years by conducting one or more workshops. National Program Workshops allow ARS to periodically update the vision and rationale of each National Program and assess the relevancy, effectiveness, and responsiveness of ARS research.

Site Reviews

The NPS or an Area Office can call for periodic external in-depth reviews of individual Research Units or ARS research sites. The fresh perspective of outside reviewers yields objective and useful insights. These reviews provide valuable information about the strengths and weaknesses of our programs and assist the Area in planning improvements and management actions. Review panels are selected based on their knowledge of the research area and are charged with conducting an objective evaluation of a Research Unit/Location. The review panel is tasked with examining the effectiveness of the Unit's overall program in implementing the National Program Action Plan as well as the progress in meeting objectives of each research project. The panel also evaluates management effectiveness by considering the relationships between staff, funds, facilities, equipment, resource deployment, and leadership. Reviewer's judgment on the effectiveness of any collaboration of the Unit with other laboratories, with other ARS locations, government agencies, and universities or technology transfer interactions with industry is important. Review panels prepare written reports that are submitted confidentially to the Area Director for use by ARS management.

Research Position Evaluation System (RPES)

RPES provides for review of ARS Category 1 positions on a cyclical basis to assure classification accuracy. Under this system, research scientists have open-ended promotion potential based on their personal research and leadership accomplishments, which can change the complexity and responsibility of their positions. Primary management responsibility for RPES rests with the Associate Administrator. RPES is administered on a nationwide basis by the Research Position Evaluation Staff in the ARS Human Resources Division.

Approval of Positions at Research Sites

NPLs approve the person(s) selected to fill new or vacant positions to ensure their scientific background and experiences are consistent with the mission of the research unit and the objectives of the CRIS project plan.

Annual Resource Management Plan (ARMP)

The Annual Resource Management Plan (ARMP) is the principle component of the ARS Resource Management Plan System (ARMPS). The ARMPS process represents a structured, disciplined approach to establish the framework for integrated resource planning and improve program and resource accountability. NPLs are responsible for

selecting research priorities and allocating resources and as such review ARMP documents annually for conformity with research objectives.

Authorization to Use Funds from Outside Sources

ARS may enter into Trust and Reimbursable Cooperative Agreements with other Federal agencies, States, local governments, private firms, institutions, and individuals and receive funds or other resources for conducting research and service work, preparing surveys and reports, and carrying out other related activities when the work:

- Supports the mission of ARS.
- Is of mutual interest to ARS and the outside source of funds or other resources.
- Supplements without detracting from the programs of the scientist and the unit performing the work.
- Is related to the expertise and assignment of the individual(s) performing the work.
- Does not interfere with the work assigned by ARS to the unit and individual(s) performing the work.
- Is approved through the ARS-425 process in ARIS **before** a proposal is submitted to a potential source of outside funds or other resource
- Is fully documented and tracked with respect to the work and the source of outside funds or other resources.

Coding of ARS Research Projects

The coding of ARS research projects is a very important tool used throughout the Agency for tracking of research and dollars as well as for reporting out to Congress, commodity groups, and stakeholders. You should understand the ARS coding system (see [Appendix 4](#)), as this is essential for determining the research boundaries of a management or research unit, completing ARS Forms (see [Appendix 3](#)), and retrieving information from ARIS.

When new research projects are initiated through FY program increases, NPS establishes the codes that should be used as part of the implementation memoranda process. In addition, when adding funds to an existing project, coding is also designated to ensure that the funding will be properly reflected for the increase. The coding assigned not only impacts the projects and what the Agency reports, but the implementation memoranda are also used for forecasting of dollars for the “frozen” budget file in ARIS. Therefore, if the memoranda incorrectly designate the project for which the funds are going to, or the coding is incorrect, the frozen budget file will also be incorrect.

The second part of this process is the implementation of the actions listed in the implementation memoranda. Once the implementation memoranda are sent to the management units, the units in turn implement new projects or modify existing projects and send them to NPS through ARIS for approval. The coding on each project must be reviewed very carefully by the National Program Teams for each of these projects to ensure the coding has been properly established and/or modified to reflect the program increases.

Implementation Memoranda

When the appropriation process is completed, the Agency establishes the funding levels for all new program increases. The lead National Program Leader for the project consults with the Area Director, other members of the National Program Team, the Center/Institute Director, and the Research Leader of the fund-receiving Management Unit to obtain background information necessary to prepare the Implementation Memorandum, to identify the new or expanded funds, to determine the ARS project targeted to receive the funds, to provide guidance to the Research Leader concerning the preparation and submittal of revised AD-416/417s (See [Appendix 3](#)) to reflect changes in the project, and, when significant changes are made in the project, to provide guidance on the project's need for peer review. Likewise, if a new project is to be created, the Implementation Memorandum will reflect the appropriate guidance.

When preparing the Implementation Memorandum, adequate funding per Research Scientist should be taken into consideration. When adequate funds exist, Research Scientist recruitment information is included, as appropriate. The National Program Leader works closely with the Area Director and Research Leader to provide specific guidance for implementing extramural agreements when congressional language calls for cooperative research with universities or other organizations. The general policy in these cases is for ARS to develop cooperative research by using some of the funds to support in-house research and part to support cooperative extramural research on the same issue. In these situations, the intramural and extramural research should be closely coordinated to ensure cost effectiveness and maximum benefit to American agriculture. Unless otherwise specified, the transfer of these funds to cooperating institutions should occur within 90 days of the funds being made available to ARS. The respective Associate Deputy Administrator, NPS; Deputy Administrator, NPS; and the Administrator must approve all such memoranda.

Administrator-Funded Research Associate Program

Each year, the ARS Administrator funds 50 post-doc proposals for a two-year period. The Area Director and the National Program Leadership Team evaluate each submitted proposal independently for the identified National Program. Criteria for evaluation include scientific excellence, relevance to National Program objectives, and capacity to perform and manage the proposed work. The two scores are combined to determine which proposals are funded. One proposal will be recognized as the single best proposal overall, and the Research Associate will be designated as the T.W. Edminster Research Associate. The funded proposals, and the T.W. Edminster winner, will be announced at the Administrator's Council meeting in September each year.

A permanent ARS scientist (Category 1 or 4) submits a proposal in June. A scientist can submit only one proposal. Only one proposal can be submitted. The ARS scientist serves as the mentor and supervisor of the Research Associate. Proposals from a Category 2 scientist as the supervisor cannot be funded. Proposals cannot be submitted by a scientist on a Performance Improvement Plan (PIP) or by a temporary Scientist. The proposals should outline research that can be accomplished in 2 years and is directly relevant to the research project under which it is submitted. Proposals that identify specific achievable objectives will receive more favorable consideration than those that simply speed progress towards long-term goals.

Every research project in ARS is part of either one or two National Programs. A submitted proposal must identify a single National Program under which it is to be considered. The identified National Program must be one associated with the base project. If the base research project is associated with two National Programs, either the primary or the secondary National Program can be identified. In the text, the proposal should also specify which National Program objective(s) will be advanced by the proposed research.

The awarded proposals are funded for a two-year period at \$50,000 per year maximum. The T.W. Edminster Awardee receives \$60,000 per year for a two-year period.

Briefing Papers

NPLs are responsible for preparing briefing papers that are provided to senior agency representatives (e.g., Under Secretary of REE) when they testify before Congress after the President has submitted his budget proposal in February. The format for Briefing Papers is provided in [Appendix 6](#).

Congressional Questions and Answers

Congress submits written questions to Federal agencies after senior agency representatives have testified before Congress. NPS is responsible for preparing written answers to these Congressional questions. This usually occurs in the spring of each year.

Blue Folders (ARS Forms 416/417/425/550)

Each NPL has ARS research projects they are responsible for as Team Leader or Team Member. As the scientists in the management units initiate new projects or revisions to existing projects, these projects are sent through the approval chain to NPS for approval via ARIS. When the projects reach NPS, they are printed and put in “Blue” folders for the respective teams’ review and approval/disapproval.

Blue folders designate in-house projects, extramural research projects (Specific cooperative agreements, Grants, Non-funded Cooperative Agreements and MOUs), or intramural research projects (Reimbursable or Trust fund agreements) that require review and approval. It is the responsibility of the NPL to review the new project and/or changes to existing projects requested by the field. Review should include careful consideration of the coding (SOI, activity, STP, NP, and special codes) entered on these projects, in addition to other changes such as modifications to objectives, approach and investigators. Once approved and signed off, the project moves to the next team member for approval. The team leader and ADA are last to sign off before returning to the ODA Program Analyst and BPMS for final approval.

Red Folders (ARS Form-115)

Red folders contain **ARS Form-115**, which is used for Manuscript review and approvals. Only those Form-115s that pertain to subjects on the List of Sensitive Issues (See [Appendix 7](#)) come to NPS for approval. All other ARS Form-115s are approved at a lower level. The Team Leader and the ADA listed on each ARS Form-115 review and approve/disapprove the manuscripts.

Government Performance and Results Act (GPRA)

Background

ARS has developed a series of Strategic and Implementation Plans to guide its research program beginning in the early 1980s. The Congress made this a statutory requirement with the enactment of the Government Performance and Results Act of 1993 (GPRA). GPRA required all Federal agencies, including research agencies, to develop a 5-year Strategic Plan, an Annual Performance Plan that projects what will be accomplished with the funds requested in the President's budget, and an Annual Performance Report to identify what was actually accomplished in that fiscal year. ARS responded to the enactment of GPRA by:

- convening 6 Visioning Conferences with customers and stakeholders to identify the longer term needs of American Agriculture;
- convening and co-chairing the Research Roundtable, an ad hoc group of Federal research agencies, that worked to define how to apply GPRA in a research environment; and
- establishing an Agency-wide Strategic Planning Team to develop the first GPRA driven ARS Strategic Plan 1997-2002.
- revising the AD-421 (annual project report) to capture the information needed to complete the GPRA Annual Performance Plans (APPs) and Reports (APRs). The National Program Teams review the AD-421s and select the information needed to complete the APPs and APRs.
- utilizing the FY 2005 ARS Budget Team (which was already tasked with developing a budget under the Budget Performance Integration initiative which is part of the President's Management Agenda) to develop the new ARS Strategic Plan 2003-2007.

National Programs as they Relate to GPRA

To strengthen programmatic accountability under GPRA, ARS aggregated 1,100+ research projects into 22 National Programs. One or more customer/stakeholder workshops were held to help set the research agenda for each National Program. The National Program Action Plan enables each scientist working in a given National Program to better understand how his/her work fits into the program. Each GPRA Annual Performance Plan establishes indicators (milestones) that, if achieved, will help make progress towards meeting the Strategic and programmatic goals. To further strengthen the quality and relevancy of the research conducted in each National Program, ARS is currently developing a retrospective evaluation process to assess the progress made near the end of the 5-year program cycle. The National Programs were developed after the first GPRA Strategic Plan 1997-2002 went into effect. Thus that plan was not aligned with the National Program structure. The new plan, covering fiscal years 2003-2007, places each National Program in one location, under one Goal and one Objective, relating to 1 to 4 Performance Measures. The Strategic Plan now reinforces the National Program structure and the Plan is designed to clarify and simplify the data gathering and reporting requirements of GPRA.

Measuring Performance under GPRA

Beginning with FY 1998, ARS has used a narrative format to measure progress towards the Goals, Objectives, and Performance Measures in the Strategic Plan. In this format, ARS' APP anticipates accomplishments 1, 2, or 3 fiscal years ahead (indicators of progress/milestones). After the close of a given fiscal year, the APR identifies what was actually achieved against each indicator and what the impact/outcome of that accomplishment is or may be. The philosophical basis of the narrative approach is that achieving each of the annual indicators constitutes progress towards achieving each Performance Measure and each Goal. All of the Federal research agencies have struggled with the difficult task of meaningfully measuring performance in a research environment, but this approach has been useful to ARS in focusing its work on solving the problems confronting American agriculture.

The ARS Strategic Plan 2003-2007, Annual Performance Plans, and Annual Performance Reports are available on the ARS homepage, www.ars.usda.gov/research/programs.htm. The Plans and Reports are listed under the heading "About the Programs."

Program Assessment Rating Tool (PART)

The Office of Management and Budget (OMB) has developed the Program Assessment Rating Tool (PART) instrument which they propose to apply to all Federal programs, including research programs. The PART analysis is divided into 4 Sections: I. Program Purpose and Design, II. Strategic Planning, III. Program Management, and IV. Program Results/Accountability. There are a total of 20+ questions the 4 sections that are specific to the type of program being evaluated. Each question and each section is weighted and it produces a numerical score at the conclusion of the review. The Agency answers each question, provides an explanation of its answers and evidence to support its positions. An OMB examiner then reviews the submission and he/she scores the program as they see it. In FY 2003, ARS selected the Food Safety National Program as our pilot and applied the PART criteria as described in OMB's instructions. The ARS self-assessment rated the program high, but OMB came in with a much lower number. While our overall score increased when the document was revised and resubmitted it remains a point of contention.

Even though we have met with OMB on a number of occasions to discuss issues relating to strategic and performance planning and performance measurement (Sections II and IV), it is clear that we continue to have a serious disconnect in this area. OMB has asked us to do larger aggregations of our research program than we had originally planned to do. ARS had identified 8 PART "clusters" which encompassed all of our 22 National Programs. OMB has now asked us to do PART assessments by each Strategic Plan Goal. The PART assessment of all ARS research under Goal I will occur in the spring of 2004.

VI. The Budget Process

Introduction

The annual development of the Agency's budget proposals provides ARS an opportunity to detail the priorities and research needs of American agriculture in a complete, comprehensive, and coherent manner. The NPS Budget Team, an ad hoc group appointed by the Deputy Administrator, NPS, whose membership changes yearly, incorporates input from NPS and the Area Directors to construct the ARS portion of the proposed Presidential budget. While NPS is primarily responsible for developing the ARS budget, Area Directors play an important role in the identification of high-priority research needs because of their interaction with State, local, and regional governments, organizations representing producers and processors at the area level, farm media, and congressional offices in each state. Research Leaders should use this opportunity to communicate Management Unit needs through supervisory channels to the Area Director and to the appropriate National Program Leader.

Development of the President's Budget

Every year the NPS works on three fiscal year (FY) budgets: the current FY budget, the proposed President's budget (for the following year), and the development of the President's budget for the next year. The development of the President's budget begins in February.

February/March (Beginning the budget cycle for the next Fiscal Year)

- The Deputy Administrator, NPS, appoints the Budget Team to oversee development of the ARS budget for the subsequent fiscal year.
- Area Directors are asked to identify a few top-priority issues of national or regional significance that need to be considered in the budget development process.
- For each issue identified, the Area Directors will develop one or two paragraphs that:
 - Identify each problem,
 - Propose possible solutions, and
 - Identify the resources needed to address the problem.

April 1

- Area Directors' budget items are due to the NPS Budget Team

April/May

The NPS Budget Team:

- Reviews the Area Directors' high priority proposals to ensure that they are consistent with the vision, mission, and goals of the National Program(s) that would address these issues.
- Works with the National Program Teams to determine new research priorities that are consistent with the National Program Action Plan.
- Develops the "Agency Estimates" [the document that transmits the ARS proposed budget to the Department (i.e., the USDA)].

May/June

- NPS Budget Team and BPMS brief the Area Directors on the "Agency Estimates" during the May/June Administrator's Council meeting.

July

- ARS submits its budget request to the Office of the Secretary.

August/September

- USDA provides specific guidance to ARS regarding its budget request and how the Department would like to see the request revised.
- ARS responds to the USDA input on its budget.

September

- NPS Budget Team and BPMS brief the Area Directors on the "Department Estimates" (the document that transmits the USDA proposed budget to OMB) during the September Administrator's Council meeting.

September/October

- NPS prepares an implementation plan based on the Department Estimates

October 1

- Annual research project reports (AD-421) are due from the Area Offices to NPS.

October/November

- National Program Leaders review all AD-421 reports to identify significant research accomplishments for use in the next fiscal year's Explanatory Notes ("green sheets"), the preceding year's National Program Annual Report.

November

- OMB provides USDA (and ARS) with the “passback” (OMB’s response to the Department’s budget request). On the basis of this information, NPS and BPMS recommend which issues to ask the Department to appeal and how to fund new Presidential Initiatives that may be requested in the “passback.”

December/January

- Negotiations between ARS, USDA, and OMB continue until all outstanding issues are resolved.
- NPS works with the Area Directors, BPMS, and the Information Staff to develop a communications strategy that is timed to the release of the President's budget to Congress (early February). The communications strategy provides information to ARS employees, customers, stakeholders, partners, and the public about the ARS budget request.

February

The President announces his budget request for the next fiscal year to Congress.

February/October +

- The President’s budget is assigned to the House and Senate Appropriations Committees and the USDA request is further referred to the appropriate subcommittees.
- Hearings, as determined by the subcommittee, are held that may include receiving testimony from the Under Secretary for REE, the ARS Administrator, customers, stakeholders, partners, and other witnesses.
- The congressional budget process will set overall spending levels for the Appropriations Committees.
- In both Houses, the Agriculture subcommittees and the full Appropriations Committees will hold a series of “mark-up” sessions to establish the funding levels for USDA, including ARS.
- Both the House and Senate approve their versions of the USDA appropriations bill.
- A joint House/Senate Conference Committee (made up of members from both Houses) meet to resolve differences in the House and Senate passed versions of the bill. The legislation reflecting the agreed upon funding levels is called a Conference Report, which is not open to further amendment.
- Both Houses approve the Conference Report.
- The bill is sent to the President for signature (or veto).
- After the President approves the bill, OMB apportions the funds to the Department, and USDA can begin to operate at the approved funding levels.

Off-Budget Initiatives

- **Moving Resources between Locations.** To move resources between locations, Area Directors should consult with NPS and have preliminary conversations with the Administrator's office before submitting the proposal for Operations Staff consideration. Moving money across congressional districts requires congressional approval.
- **Decreasing Budget and Redirecting Resources.** NPS and Area Directors need to give a common message to all the customers and stakeholders interested in a specific project or location. ARS must provide up-to-date, accurate information to the people and groups who have historically supported ARS research programs. A realistic assessment of what research issues can and will be addressed must be provided. Reallocation of funds across CRIS projects within a Management Unit as proposed by a fund holder (Research Leader) must be approved by the Area Director and the appropriate National Program Leader.
- **Over-extended Projects.** Research scientists may sometimes face a situation where they are asked to do more research than available resources allow. In such cases, the Area Directors should work with the appropriate National Program Leader and the Research Leader to narrow the program scope, if appropriate, to suit available resources. If the questioned research is determined to be of lesser priority than an emerging priority, then redirection of resources may be the appropriate solution.
- **Fluctuations in Support, Available Resources, and Under-funded Projects.** Over time, projects and programs experience fluctuations in level of support. Area Directors should work with Research Leaders and appropriate National Program Leaders in an attempt to mitigate resulting problems by Developing options and strategies for securing additional funds to supplement appropriated resources.
- **External Requests for Agency Commodity/Program Funding Levels.** These requested financial statements must be obtained from BPMS and are based on “gross frozen dollars.” This avoids giving out conflicting and confusing summaries of ARS investments in various programs.

VII. NPL Performance Standards and Documentation

Performance Standards

NPLs are responsible for managing their performance against six performance standards (see [Appendix 10](#)). These standards of performance, described at the “Fully Successful” level, form the basis for appraising your performance annually, starting in January and ending in December. It is recommended that NPLs meet with their supervisor at the start of each performance cycle to develop performance plans that are in-line with the mission, goals, and objectives of ARS. This will ensure that you are focused in meeting the needs of the agency and will facilitate your performance appraisal, which is based on comparing your performance of duties and responsibilities against the six established performance standards.

Performance Documentation

Accurate documentation of your performance is critical, as it will form the basis for determining your level of performance. The recommended format for documenting your performance is provided with an example in [Appendix 11](#).

VIII. Recommended Training

Congressional Briefing Conference

The Congressional Briefing Conference will provide participants the opportunity to:

- Learn about legislative process.
- Learn about legislative issues of relevance to ARS.
- Meet key people involved with agricultural legislation.

Designed and presented for ARS by the Government Affairs Institute, Georgetown University. Participants will be provided with a hands-on understanding of Congressional process and procedure as well as the culture that is the United States Congress. Presentations will be offered by Members of Congress, Congressional staff, academics, lobbyists, journalists, and Executive Branch officials. Topics will be:

- Leadership, organization, and party structure of Congress.
- Authorization, appropriation, and budget process.
- Role of committees and committee hearings.
- Relationship between Congress and Executive Branch.
- Role of media and special interests.
- A panel presentation and discussion with ARS officials from the Administrator's Office, National Program Staff, Information Staff, Congressional Liaison, Budget Office, and Financial Management.

Offered 4 days in May and June.

Location:

Rayburn House Office Building
Capitol Hill
Washington, DC

Contact:

Mary Silva, HRD, (301) 504-1455

Office of Personnel Management (OPM) Training

Federal Executive Institute (FEI)

Leadership for a Democratic Society (LDS)

The Federal Executive Institute (FEI) is the Federal Government's development center for senior executives. FEI brings Senior Executive Service (SES) members and high-performance GS-15's together for programs that help executives develop broad corporate viewpoints, understand their constitutional roles, enhance essential skills, and improve government for the American people.

FEI offers seven *Leadership for a Democratic Society* programs that are four weeks in length, and three split programs totaling four weeks in length in residence with colleagues from other departments, enhancing their skills and exchanging ideas to improve performance.

The objectives of the *Leadership for a Democratic Society* program is to help agencies in the development of their career executive corps and link individual development to improved agency performance. Mutually supporting program themes are based on information gleaned from FEI's constant contact with the leaders of the Federal Government and on insights derived from over 30 years of experience in executive development.

The Employee Development Section, HRD, will reserve and coordinate all spaces requested and allocate to the REE agencies. OPM will notify the REE coordinator of approved spaces. The coordinator will contact you regarding your spaces and a SF-182 will be due eight weeks in advance of each program.

Contact:

FEI (804) 980-6200

<http://www.opm.gov/mdc>

IX. Individual Development Planning

Individual Development Plans (IDPs) serve as a communication tool for managers and employees. The benefit of the IDP is to integrate management's goals, the employee's goals, and those of the organization:

- They are a written schedule or plan describing immediate and long-term employee goals and training needs.
- Help to organize plans for training and development.
- Should be completed or updated each year within 30 days of the annual performance appraisal.
- Should be developed as a result of a discussion with your supervisor to determine the desired goals and training needs.

To initiate the process please complete **Form ARS-48** (see [Appendix 3](#)). For additional information about IDPs, visit the web site Individual Development Planning, "The Road to Success," which can be found at <http://www.afm.ars.usda.gov/hrd/empdev/idp.htm>

X. Appendices

Appendix 1

Appendix 2

Appendix 3

Form ARS-48

Form AD-416

Form AD-417

Form AD-421

Form ARS-425

Form ARS-550-A

OIRP Project Rating Form

Appendix 4: ARS Codes

Appendix 5: Green Sheets

Appendix 6: Briefing Paper Format

Appendix 7: List of High Profile Topics* Revised July 2003

Appendix 8: Pertinent Federal Laws

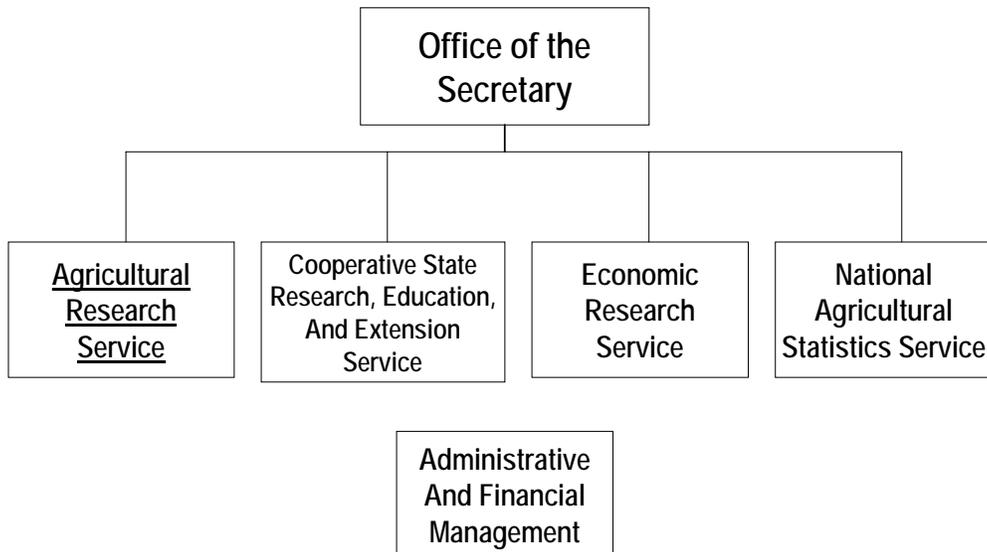
Appendix 9: Position Descriptions

Appendix 10: Performance Standards

Appendix 11: Performance Documentation

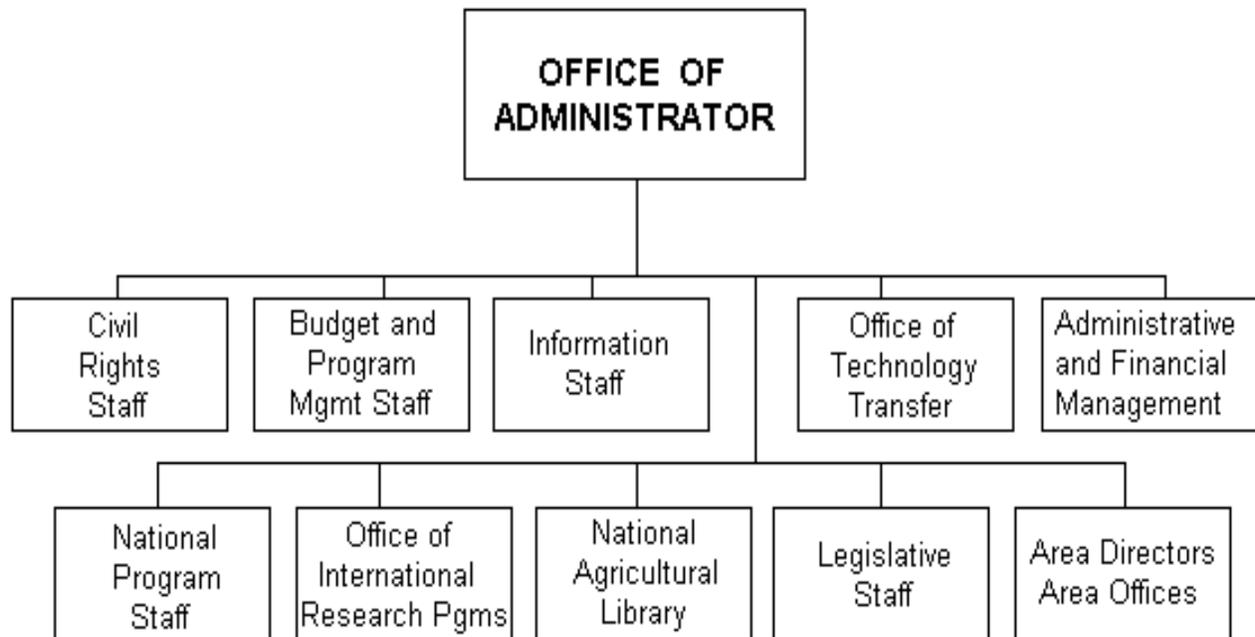
Organizational Charts

U.S. Department of Agriculture RESEARCH, EDUCATION, AND ECONOMICS



AGRICULTURAL RESEARCH SERVICE

<http://www.ars.usda.gov/>



 **DA National Program Staff**



Deputy Administrator



Associate Deputy
Administrator
**Natural Resources &
Sustainable
Agriculture Systems**



Associate Deputy
Administrator
**Animal Production
Product Value
& Safety**



Associate Deputy
Administrator
**Crop Production,
Product Value
& Safety**

Appendix 2: Program Actions, Functions, and Responsibilities

Program Actions, Functions, and Responsibilities

| <i>ACTION</i> | <i>LEAD</i> | <i>CONFER WITH</i> | <i>APPROVED BY</i> |
|--|---------------------|---------------------|--------------------|
| Establishing Priorities: | | | |
| · Agency | NPS | AD | OA |
| · National Program/Components | NPS | AD | DA |
| · National Program Action Plan | NPS | AD | DA |
| · Regional Programs | NPS | AD | Concurrence* |
| · Center/Institute | CD/ID/AD | NPS | Concurrence |
| · Laboratory | LD/CD/ID/AD | NPS | Concurrence |
| · Research Unit | RL/CD/ID/AD | NPS | Concurrence |
| · Research Project | LS/RL/CD/ID/AD | NPS | Concurrence |
| · National Agricultural Library | NAL | NPS | OA |
| Develop National Programs | NPS | AD | DA |
| Implement National Program | LS/RL/CD/ID/AD | NPS | Concurrence |
| Develop Strategic Plan for: | | | |
| · Agency | NPS | AD/CIO | OA |
| · National Program/Components | NPS | AD | DA |
| · Regional Activities | NPS | AD | Concurrence |
| · Center/Institute | CD/ID/AD | NPS | Concurrence |
| · Laboratory | CD/ID/AD | NPS | Concurrence |
| · Research Unit | RL/CD/ID/AD | NPS | Concurrence |
| · Research Project | LS/RL/CD/ID/AD | NPS | Concurrence |
| · National Agricultural Library | NAL | NPS | OA |
| Convening National Program Workshops | NPS | AD/OTT/ OSQR/CR | OA |
| Development of ARS Annual Budget Request | NPS | AD/BPMS/CIO/ NAL | OA |
| Implementation Memoranda | NPS | AD/NAL | OA |
| Develop National Program Action Plan | NPS | AD/NAL | Concurrence |
| Develop/Modify/Terminate National Program | NPS | AD | DA |
| Selecting New Permanent Sys | RL/CD/ID/AD | NPS | Concurrence |
| Selecting New Permanent RLs | AD | NPS | OA |
| OSQR Peer Review Process: | | | |
| · Management of OSQR peer review | OSQR | NPS/AD | OSQR |
| · Development of research prospectus | LS/RL/CD/ID/AD | NPS/OSQR | Concurrence |
| · Development of project plan | LS/RL/CD/ID/AD | NPS/OSQR | AD |
| · Resolving identified problems | LS/RL/CD/ID/AD | NPS/OSQR | Concurrence |
| · Implement research projects | LS/RL/CD/ID/AD | NPS | AD |
| Establishing, Eliminating, Combining or Redirecting Research Projects | RL/CD/ID/AD /NPS | RL/CD/ID/AD/ NPS | Concurrence |
| Reorganization of Research Locations/Units | CD/ID/AD | NPS | OA |

| <i>ACTION</i> | <i>LEAD</i> | <i>CONFER WITH</i> | <i>APPROVED BY</i> |
|--|--------------------|---------------------------|---------------------------|
| Protecting Intellectual Property | LS/RL/CD/ID/ AD | OTT/NPS | Concurrence |
| Developing Strategic Partnerships with Industry at the National Level | NPS | AD/OTT | Concurrence |
| Developing Cooperative Research Programs | LS/RL/CD/ID/ AD | OTT/NPS | Concurrence |
| International Collaborations | LS/RL/CD/ID/ AD | OIRP/NPS | Concurrence |
| User-Software Development | LS/RL/CD/ID/ AD | NPS/CIO | Concurrence |
| Quality and Productivity of Research Programs/Projects in National Programs | | | |
| · Performance Appraisals | RL/CD/ID/AD | NPS | AD |
| · RPES | RL/CD/ID/AD | NPS | AD |
| · Location reviews | RL/CD/ID/AD | | Concurrence |
| Research Project Reports (AD-421s) | LS/RL/CD/ID/ AD | --- | NPS |
| GPRA Plan and Report | NPS | AD | DA |
| Mid-term National Program assessment | NPS | AD | DA |
| National Program Assessment | NPS | AD | DA |

*If agreement cannot be reached through concurrence, the Office of the Administrator should be involved.

Definitions:

- AD = Area Director
- BPMS = Budget and Program Management Staff
- CD = Center Director
- CIO = Chief Information Officer
- CR = Civil Rights Office
- DA = Deputy Administrator, NPS
- ID = Institute Director
- LD = Laboratory Director
- LS = Lead Scientist
- NAL = National Agricultural Library
- NPS = National Program Staff
- OA = Office of the Administrator
- OSQR = Office of Scientific Quality Review
- OIRP = Office of International Research Programs
- OTT = Office of Technology Transfer
- RL = Research Leader

Appendix 3 – ARS Forms

Form ARS 48 - Individual Development Plan

Form ARS-115 - Request to Submit Manuscript for Publication in ARIS

Form AD-416 - Research Work Unit/Project Description - Research Resume
Modified by ARS/Available in ARIS

Form AD-417 - Research Work Unit/Project Description - Classification of Research
Modified by ARS/Available in ARIS

Form AD-421 -Research Progress Report
Modified by ARS/Available in ARIS

Form ARS- 425 - Authorization to Apply for and Use Funds from Outside Sources in ARIS

Form ARS-550A - Plan and Authorization to Fund Extramural Research in ARIS

OIRP Project Rating Form - Form to rate and comment on proposed international research projects

Form ARS-48

NOTE: Object Help contains completion instructions.

INDIVIDUAL DEVELOPMENT PLAN

| | | | |
|---|--|--|--------------------|
| 1. EMPLOYEE'S NAME (Last, first, initial) | 4. DESCRIPTION OF WORK ASSIGNMENTS | | |
| 2. CURRENT POSITION TITLE | A. Current Performance Elements Identified for Development/Training | | |
| 3. ORGANIZATION NAME AND LOCATION | B. Projected/Potential Assignments | | |
| 5. Performance Related Knowledge, Skills, and Abilities | 6. Development Work Experiences (On-the-job assignments, Self development) | 7. Formal Training (Courses, Seminars) | |
| 8. The supervisor and employee have completed the IDP process and have determined that no training or developmental needs are indicated at this time. <input type="checkbox"/> | 9. SIGNATURE and DATE | | |
| | EMPLOYEE | SUPERVISOR | APPROVING OFFICIAL |

Form ARS-48 (8/83)

(Use continuation sheet for additional comments)

USDA-ARS

INDIVIDUAL DEVELOPMENT PLAN (Continuation Sheet)

| | | |
|---|---|---|
| 1. EMPLOYEE'S NAME (<i>Last, first, initial</i>) | 2. CURRENT POSITION TITLE | 3. ORGANIZATION NAME AND LOCATION |
| 5. Performance Related Knowledge, Skills, and Abilities | 6. Development Work Experiences (<i>On-the-job assignments, Self development</i>) | 7. Formal Training (<i>Courses, Seminars</i>) |

ADDITIONAL COMMENTS

Form ARS-115

Agricultural Research Information System
Request to Submit Manuscript for Publication

Project Number: _____ Log Number: _____ Creation Date: _____
 Modecode: _____

Team Leader: _____ ADA: _____
 Submitter: _____ Telephone: _____
 Title: _____ Email: _____
 Scientist to Contact: _____ Email: _____
 Telephone: _____
 Fax: _____

Manuscript has been: Peer Reviewed: _____ (Attached All ARS-533s)
 Does manuscript report CRADA Research?: _____ If yes, CRADA Agreement Number: _____
 Has CRADA Cooperator been Notified of Manuscript? _____

First Formal Report Other than Abstract: _____
 Title of Manuscript: _____

Journal or Equivalent: _____
 Publication Type: _____
 Date Submitted to Journal: _____ Acceptance Date: _____
 URL: _____ Previously Submitted: _____
 Publication Date: _____ Hold from Tektran until Published: _____
 Citation: _____ Hold from Tektran Permanently: _____

Patent Information:
 Due to patent potential, is retention of intellectual property rights desired? If unknown,
 contact Patent Advisor. If yes, submit a hard copy of the 115 to your patent advisor.
 If Patent Application, Serial Number: _____ Date Application Filed: _____

| Author(s) | Series | Authorship | Employer | Cleared |
|-----------|--------|------------|----------|---------|
|-----------|--------|------------|----------|---------|

** Indicates approval of all Non-ARS authors of the Interpretive Summary, Technical Abstract, and Affiliation to be released to the public.

| Title | Approving Official | Date | High Profile Topics | App/Disapp |
|------------------|--------------------|------|---------------------|------------|
| Research Leader: | | | | |
| LD/ID/CD Dir: | | | | |
| Area Director: | | | | |
| NPS NPL1: | | | | |
| NPS NPL2: | | | | |
| NPS NPL3: | | | | |
| NPS ADA: | | | | |
| OTT Director: | | | | |

Agricultural Research Information System
Request to Submit Manuscript for Publication

Interpretive Summary:

Log Number:

Technical Abstract:

ARS - 115

Form AD-416

Blank Form AD-416

**** UNOFFICIAL PROJECT ****

Page:

1. Accession: 2-4. Agency ID: 5. Project Number: 6. Status

7. Title:

8. Performing Organization:

12. SY Time/Investigator/Series/Grade SY Total:

16. Research Location on Campus:

17-1. Project Type:

21. Facilities:

22. Regional Project Number: Total Net to Loc:

17.2 Agreement with:

Agreement No.:

24. OBJECTIVE:

25. APPROACH:

27. Keywords:

| Signature | Recommended | A/D | Date | Approved Signature | Concurred A/D | Date |
|------------------|-------------|-----|------|--------------------|---------------|------|
| Research Leader: | | | | NPL1: | | |
| CD/LD/DAD: | | | | NPL2: | | |
| ABFO: | | | | NPL3: | | |
| PAO: | | | | BPMS: | | |
| Area Director: | | | | ADA: | | |

28. Award Date: 29. Start Date: 30. Termination Date: Duration (months)

NPL Team: ADA: Leader:

Form AD-417

Blank Form AD-417 Document Printed: ***** UNOFFICIAL PROJECT ***** Page:
 1. Accession: 2-4. Mode Code: 5. Project Number: Date Last Modified:

NP(s) % Net to Location
 STP (s)
 32. Basic Research:
 33. Applied Research:
 34. Developmental Research:

| Subject of Investigation | Research Problem Area Code | Field of Science Code | Percent Effort | Net to Location |
|--------------------------|----------------------------|-----------------------|----------------|-----------------|
|--------------------------|----------------------------|-----------------------|----------------|-----------------|

| SubClass. | Codes | Description | % | Net to Location |
|-----------|-------|-------------|---|-----------------|
|-----------|-------|-------------|---|-----------------|

SOI
 Activity
 Special
 RPA
 REE

* Note: Rounding may cause minor differences in calculated value compared to the actual

Form ARS-425

Agricultural Research Service
 Agricultural Research Information System
 Authorization to Apply for and Use Funds From Outside Sources

Modecode/Log Number: Status:
 Location/Management Unit Name:

Contact: Type:
 Series: Telephone:

Purpose of Funds: Type of Service:
 Type of Agreement:
 Remarks:

Original Source of Funds: Type:
 Direct Source of Funds: Type:
 IPSC:
 Requesting IPSC Waiver: Waiver approved by BPMS:
 Why are you requesting IPSC?

Do you or any full-time resident of your household have any activity or financial interest (dealings) with the Cooperating Organization?

Start Date: End Date: Duration: (months)

| | | |
|---------------------------|-----------|-----------------|
| How are funds to be used? | ARS FTE: | Total Proposed: |
| Category 1 Salaries: | Supplies: | Equipment: |
| Other Federal Salaries | Travel: | RSA: |
| Other Costs: | | |

Value of Owned or Controlled ARS Buildings & Land Utilized:

Area Ethics Advisor ONLY:
 Confirmation and determination of 'dealings' question responded by SY.

| Signature | Recommended | A/D | Date | Signature | Approved / Concurred | A/D | Date |
|------------|-------------|-----|------|-----------|----------------------|-----|------|
| RL: | | | | NPL1: | | | |
| CD/LD/DAD: | | | | NPL2: | | | |
| ABFO: | | | | NPL3: | | | |
| AD: | | | | BPMS: | | | |
| PAO: | | | | ADA: | | | |

Agricultural Research Service
Agricultural Research Information System
Authorization to Apply for and Use Funds From Outside Sources

Modocode/Log Number: Status:
Title of Proposal: Project Number:
Accession:
Type of Work to be Completed:

Work to be Performed:
Extramural Agreement Type:
Principal Performing Organization: Extramural Amount:

If part or all of funds will be used for extramural research, give reason:

Title of In-house Project: Project Number:
Accession:

Is the proposed research directly related to the in-house project of the SY?
Subject of Investigation from In-house:

STP Codes from In-house:

Describe the deliverables that the Agency will provide the funding organization:

Will this research require more FTE than currently available to SY/MU?
Number of FTE needed:

AREA DIRECTOR ONLY:

Will the Area Director agree to provide the FTE if project is funded?

Does the SY/MU have the needed expertise/facilities/time to conduct the proposed research?

Is the proposed funding level and duration adequate to provide the deliverables described above?

Form ARS-425

***** Unofficial *****

Form ARS-550-A

Agricultural Research Information System
Plan and Authorization
To Fund Extramural Research

Mode Code

Location / Management Unit Name Agreement NO

Name of ADODR:

Telephone No:

Type of Agreement Requested:

Starting Date Ending Date:

Type of Request:

Accounting Code:

Project Number:

Accession NO:

Title of Agreement:

Extramural Performing Organization:

Title of Related Inhouse:

Project Number:

Reason Research cannot be done by ARS Scientist:

Name and Title of Principal Investigator Conducting
the Extramural Research:

Location where Extramural
Research will be conducted:

Statement of work to be performed and report / publication requested by ARS:

Frequency of Report:

First Report due date:

Final Report due date:

Do you or any full-time resident of your household have any activity or financial interests
(dealings) with the Cooperating Organization?

If Yes, enter brief explanation:

Area Ethics Officer Only:

Confirmation and determination of 'dealings' question responded by SY.

If Dealings, brief Explanation.

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***** UNOFFICIAL *****

Agricultural Research Information System
Plan and Authorization
To Fund Extramural Research
Budget Page

Project Number:

Mode Code:

ADODR:

Agreement Number:

| Funding Project | Accession | 425 Log | Amount | FY | SBG Fee |
|-----------------|-----------|---------|--------|----|---------|
|-----------------|-----------|---------|--------|----|---------|

OIRP Project Rating Form

| | | | | | | | | | | | |
|--|---------------|---|------------------|---|---|---|---|---|---|---|----------|
| Proposal No. | Panel: | | Reviewer: | | | | | | | | |
| Title of Proposal: | | | | | | | | | | | |
| FSU cooperator/institute: | | | | | | | | | | | |
| ARS cooperator/institute: | | | | | | | | | | | |
| Program objectives: | | | | | | | | | | | |
| <p>Advance agricultural science in FSU countries, sustained by strong collegial relationships between FSU and ARS scientists</p> <p>Enhance ARS research programs</p> <p>Improve economy of FSU countries</p> <p>Engage former weapons scientists in FSU countries</p> | | | | | | | | | | | |
| Please consider the strengths and weaknesses of the proposal addressing the following points: | | | | | | | | | | | |
| <p>Importance of the problem to FSU country and to ARS</p> <p>Quality of science</p> <p>Probability of success as measured by publications, patents, impact and sustainability</p> <p>Suitability of cooperators and their respective facilities</p> <p>Nature and quality of the collaboration</p> <p>Weapons scientist engagement and security issues</p> <p>Degree to which the program objectives listed above are met</p> | | | | | | | | | | | |
| <p><i>Anonymous excerpts from the reviews may be sent to the investigators. Comments written on the proposal itself cannot be used. Please write all comments on separate pages and attach them to this form.</i></p> | | | | | | | | | | | |
| RATINGS AND RECOMMENDATIONS | | | | | | | | | | | |
| <i>Circle one number in each row</i> | | | | | | | | | | | |
| Scientific Merit | Excellent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Poor |
| Probability of Success | Very high | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very low |
| Quality of Collaboration | Very high | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very low |

| | | | | | | | | | | | |
|--|---------------|---|---|---|------------------|---|---|---|---|---|----------|
| Proposal No. | Panel: | | | | Reviewer: | | | | | | |
| Anticipated Benefits to FSU country and to ARS | Very high | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very low |
| Support Recommendation | Very high | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very low |

| | | | | | | | | | | | |
|---------------------|---------------|--|--|--|------------------|--|--|--|--|--|--|
| Proposal No. | Panel: | | | | Reviewer: | | | | | | |
|---------------------|---------------|--|--|--|------------------|--|--|--|--|--|--|

Comments: *(Additional, separate sheets may be attached).*

Appendix 4: ARS Codes

ARS Codes

Field of Science Codes

Activity Codes

Subject of Investigation Codes (SOI)

Mode Codes

Special Classification Codes

- **Farm Bill Purpose Codes**
 - **Agrichemicals Pest Control (AC)**
 - **Biofuels**
 - **Biological Control**
 - **Biotechnology (BT)**
 - **Biotechnology Risk Assessment**
- **Agricultural Energy Research and Development Codes**
 - **Conservation and Use of Energy**
 - **Substitute by Renewable or Non-Critical Energy Sources and Forms**
- **Entomology Research (ENT)**
- **Integrated Pest Management (IPM)**
- **Pest Control (PC) Codes**
- **Pest Management (PM)**
- **Pesticide Codes**
- **Range and Pasture Research Codes**
- **Water Quality**
- **Water Resources Codes**
- **Miscellaneous Special Codes**
- **Biosafety Levels (BSL)**
- **Foreign Country Codes**

Field of Science Codes

| Code | Description |
|-------------|---|
| 1000 | Biochemistry and biophysics |
| 1010 | Nutrition and metabolism |
| 1020 | Physiology |
| 1030 | Cellular biology |
| 1040 | Molecular biology |
| 1050 | Developmental biology |
| 1060 | Biology (whole system) |
| 1070 | Ecology |
| 1080 | Genetics (includes breeding) |
| 1090 | Immunology |
| 1100 | Bacteriology |
| 1101 | Virology |
| 1102 | Mycology |
| 1103 | Other microbiology (includes protozoology, phycology, etc.) |
| 1110 | Parasitology |
| 1120 | Nematology |
| 1130 | Entomology and acarology |
| 1140 | Weed science |
| 1150 | Toxicology |
| 1160 | Pathology |
| 1170 | Epidemiology |
| 1180 | Pharmacology |
| 1190 | Limnology |
| 2000 | Chemistry |
| 2010 | Physics |
| 2020 | Engineering |

| Code | Description |
|-------------|--|
| 2030 | Geology |
| 2040 | Mineralogy |
| 2050 | Hydrology |
| 2060 | Geography |
| 2061 | Pedology |
| 2070 | Meteorology and climatology |
| 2080 | Mathematics and computer sciences |
| 2090 | Statistics, econometrics, and biometrics |
| 3000 | Anthropology |
| 3010 | Economics |
| 3020 | Education |
| 3030 | Information and communication |
| 3040 | History |
| 3050 | Law |
| 3060 | Political science |
| 3070 | Psychology |
| 3080 | Sociology |
| 3090 | Sensory science (human senses) |
| 3100 | Management |
| 3110 | Art and architecture |
| 3111 | Landscape architecture |

Activity Codes

| Code | Description |
|------|---|
| 4100 | Resource description and inventory |
| 4300 | Resource development, conservation and management |
| 4310 | Improve irrigation |
| 4311 | Improve drainage |
| 4312 | Water use efficiency |
| 4313 | Manage the microclimate (Solar energy, wind, frost) |
| 4314 | Water and climate, to agricultural production |
| 4315 | Recharge groundwaters |
| 4316 | Harvest water for farmsteads and livestock |
| 4317 | Runoff water, quantity and quality |
| 4318 | Hydraulic structures |
| 4319 | Other conservation and use of water |
| 4320 | Water development conservation and management |
| 4321 | Assess and predict fertilizer needs in plants |
| 4322 | Fertilizer and soil nutrients |
| 4323 | Improve nutrient balance and content in plants |
| 4324 | Nutrient cycles in soil |
| 4325 | Tillage practices and cropping systems |
| 4326 | Other conservation and use of soils |
| 4331 | Prevent wind erosion of land |
| 4332 | Prevent water erosion of land |
| 4333 | Prevent reservoir and harbor sedimentation |
| 4334 | Stabilize stream channels |
| 4335 | Evaluate and predict sedimentation |
| 4336 | Reclaim and manage salt-affected land |
| 4337 | Other Conservation and use of land |

| Code | Description |
|-------------|--|
| 4350 | Conservation and management of vegetational resources |
| 4399 | Resource development, conservation and management, general |
| 4400 | Evaluation of alternative resource uses and methods of use |
| 4501 | Acarine mite |
| 4502 | Varroa mite |
| 4503 | Other animal mites and fleas |
| 4504 | Plant mites |
| 4505 | Apple maggot |
| 4506 | Caribbean fruit fly |
| 4507 | Malaysian fruit fly |
| 4508 | Mediterranean fruit fly |
| 4509 | Melon fruit fly |
| 4510 | Mexican fruit fly |
| 4511 | Oriental fruit fly |
| 4512 | Olive fruit fly |
| 4513 | West Indian fruit fly |
| 4514 | Other fruit flies |
| 4515 | Hessian fly |
| 4516 | Cattle grub |
| 4517 | Hornfly |
| 4518 | Housefly |
| 4519 | Mosquitos, sandflies, fleas |
| 4520 | Screwworm |
| 4521 | Stable fly |
| 4522 | Other vegetable, sugar cane/beet insects |
| 4523 | Other vet insect pest |
| 4524 | Pecan aphid |
| 4525 | Cotton aphid |

| Code | Description |
|-------------|----------------------------------|
| 4526 | Green peach aphid |
| 4527 | Russian wheat aphid |
| 4528 | Potato aphid |
| 4529 | Unassigned |
| 4534 | Greenhouse whitefly |
| 4535 | Sweetpotato whitefly |
| 4536 | Apple ermine moth |
| 4537 | Bollworm, corn earworm |
| 4538 | Beet armyworm |
| 4539 | Cabbage looper |
| 4540 | Codling moth |
| 4541 | Diamondback moth |
| 4542 | European corn borer |
| 4543 | Fall armyworm |
| 4544 | Gypsy moth |
| 4545 | Asian gypsy moth |
| 4546 | Pink bollworm |
| 4547 | Soybean looper |
| 4548 | Sugarcane borer |
| 4549 | Tobacco budworm |
| 4550 | Pink hibiscus mealybug |
| 4554 | Other ornamental insect pests |
| 4555 | Other fruit and nut insect pests |
| 4556 | Cattle tick |
| 4557 | Deer tick |
| 4558 | Lone star tick |
| 4559 | Other ticks |
| 4562 | Fire ants |

| Code | Description |
|------|--------------------------------------|
| 4563 | Other ants |
| 4564 | Africanized honey bee |
| 4565 | Honey bees and other beneficial bees |
| 4566 | Boll weevil |
| 4567 | Colorado potato beetle |
| 4568 | Diaprepes |
| 4569 | Pecan Weevil |
| 4570 | Cereal leaf beetle |
| 4571 | Corn rootworm |
| 4572 | Japanese beetle |
| 4573 | Asian longhorn beetle |
| 4575 | Other field crop insect pests |
| 4576 | Cockroaches |
| 4577 | Grasshoppers |
| 4580 | Insects not specified |
| 4581 | Lygus bug |
| 4582 | Stinkbug |
| 4584 | Other small grain insect pests |
| 4585 | Formosa termite |
| 4586 | Other termites |
| 4587 | <i>Thrips palmi</i> /melon thrips |
| 4588 | Pear thrips |
| 4589 | Western flower thrips |
| 4590 | Other range, forest insect pests |
| 4591 | Indian meal moth |
| 4592 | Angoumois grain moth |
| 4593 | Sawtoothed grain beetle |
| 4594 | Lesser grain borer |

| Code | Description |
|-------------|---------------------------------------|
| 4595 | Red flour beetle |
| 4596 | Rice weevil |
| 4599 | Other stored product insects |
| 4601 | Apply chemical controls |
| 4602 | Effectiveness of non-chemical control |
| 4603 | Barley yellow dwarf virus |
| 4604 | Citrus canker |
| 4605 | Citrus tristeza |
| 4606 | Potato ring rot |
| 4607 | Karnal bunt |
| 4608 | Potato early dying |
| 4609 | Eastern filbert blight |
| 4610 | Potato scab |
| 4611 | Identify plant pathogens and etiology |
| 4612 | Non-genetic disease control |
| 4613 | Non-genetic |
| 4614 | Non-genetic vector control |
| 4615 | Breed disease resistant plants |
| 4616 | Breed insect resistant plants |
| 4617 | Breed nematode resistant plants |
| 4618 | Nematicides |
| 4619 | Fungi, bacteria, and antibiotics |
| 4620 | Calf scours |
| 4621 | Salmonellosis |
| 4622 | Gastroenteritis |
| 4623 | Other enteric diseases |
| 4624 | E coli and colibacillosis |
| 4625 | Anaplasmosis |

| Code | Description |
|-------------|-------------------------------|
| 4626 | Coccidiosis |
| 4627 | Helminths |
| 4628 | Piroplasmosis |
| 4629 | Trichinosis |
| 4630 | Other parasitic diseases |
| 4631 | Swine dysentery |
| 4632 | Encephalitides |
| 4633 | Pseudorabies |
| 4634 | Other nervous system diseases |
| 4635 | Scrapie |
| 4636 | Brucellosis |
| 4637 | Epizootic bovine abortion |
| 4638 | Leptospirosis |
| 4639 | Vibriosis |
| 4640 | Other productive diseases |
| 4641 | Bovine virus diarrhea |
| 4642 | Atrophic rhinitis |
| 4643 | Infectious bronchitis |
| 4644 | Influenza |
| 4645 | New castle disease |
| 4646 | Mycoplasmosis |
| 4647 | Other respiratory disease |
| 4648 | Malignant catarrhal fever |
| 4650 | Leukosis |
| 4651 | Marek's disease |
| 4652 | Other neoplastic diseases |
| 4654 | Bloat |
| 4655 | Grass tetany |

| Code | Description |
|------|--|
| 4656 | Ketosis |
| 4657 | Milk fever |
| 4658 | Metabolic and physiological disorders |
| 4660 | Bluetongue |
| 4661 | Cholera |
| 4662 | Equine infectious anemia |
| 4663 | Erysipelas |
| 4664 | Ornithosis |
| 4665 | Other Generalized Infections |
| 4666 | Listeriosis |
| 4667 | African swine fever |
| 4668 | Food and mouth disease |
| 4669 | Other foreign animal diseases |
| 4674 | Osteomyelitis - synovitis |
| 4675 | Abscesses |
| 4676 | Arthritis |
| 4677 | Foot rot |
| 4679 | Mastit-metritis-agalactia |
| 4680 | Mycotic disease and myctox |
| 4681 | Pink eye |
| 4682 | Tuberculosis and paratuberculosis (Johnes disease) |
| 4683 | Other animal diseases and parasites |
| 4684 | Yersinia |
| 4685 | Arcobacter |
| 4686 | Helicobacter |
| 4687 | Aeromonas |
| 4690 | Campylobacter |
| 4691 | Toxoplasma |

| Code | Description |
|------|---------------------------------------|
| 4692 | Neospora |
| 4693 | Cryptosporidia |
| 4699 | Animal diseases, cross-cutting |
| 4700 | Protection against weeds |
| 4701 | Knapweed |
| 4702 | Leafy spurge |
| 4703 | Locoweed |
| 4710 | Weed competition and ecology |
| 4720 | Chemical weed control |
| 4730 | Non-chemical weed control |
| 4740 | Herbicides and residues |
| 4750 | Other weed control |
| 4810 | Fire |
| 4820 | Flood |
| 4831 | Fertilizer and soil nutrients |
| 4832 | Heavy metals |
| 4833 | Municipal wastes |
| 4834 | Processing and industrial waste |
| 4835 | Animal wastes |
| 4836 | Harvest aid chemicals |
| 4837 | Air pollutants and odors |
| 4838 | Acid rain |
| 4839 | General other pollutants |
| 4841 | Environmental stress |
| 4842 | Biological improvement and adaptation |
| 4849 | Climate extremes |
| 4850 | Birds |
| 4861 | Predators |

| Code | Description |
|-------------|---|
| 4862 | Other mammals |
| 4871 | Toxigenic fungi |
| 4872 | Food poisoning microorganisms |
| 4873 | Other spoilage organisms |
| 4874 | Molds, fungi and other microorganisms |
| 4881 | Mycotoxins |
| 4882 | Bacterial toxins |
| 4883 | Natural toxicants |
| 4884 | Poisonous and allergenic plants |
| 4885 | Other toxins |
| 4891 | Protection against noise |
| 4892 | Protection against dust |
| 4893 | Safe use of farm machinery and equipment |
| 4894 | Other agricultural hazards |
| 4910 | Germplasm collection, maintenance and distribution |
| 4911 | Germplasm evaluation |
| 4912 | Germplasm enhancement |
| 4921 | Recombinant DNA-Genetics |
| 4922 | Other genetics and heredity |
| 4930 | Morphology (anatomy, histology, and cytology) |
| 4940 | Reproduction, growth, and development |
| 4941 | Hormones |
| 4950 | Ecology and population dynamics |
| 4960 | Behavior-taxis, tropisms, and behavioral substances |
| 4970 | Chemical composition |
| 4981 | Photosynthesis |
| 4982 | Nitrogen fixation |
| 4989 | Other plants and animal metabolism |

| Code | Description |
|-------------|--|
| 4990 | Biology of plants and animals |
| 5011 | Improved breeds and varieties |
| 5012 | Physical and chemical manipulation, alteration, and treatment of commodity species |
| 5013 | Biological utilization of energy, nutrients and foodstuffs |
| 5019 | Other improvements for performance |
| 5021 | Animal wastes - feed alternatives |
| 5022 | Crop residue - feed alternatives |
| 5023 | Other alternative feed sources |
| 5030 | Managing other physical, chemical, and energy resources for improved production |
| 5090 | Improving biological efficiency of plants and animals |
| 5100 | Increasing consumer acceptability of farm and forest products |
| 5210 | Improve harvesting crops |
| 5220 | Improve crop handling |
| 5230 | Improve harvesting efficiency |
| 5240 | Control plant environment |
| 5250 | Animal waste handling |
| 5260 | Structures and facilities for housing, feeding and handling animals |
| 5270 | Biological improvements - harvesting |
| 5300 | Management of labor, capital, and other inputs |
| 5410 | Chemical and physical properties of food |
| 5420 | Biochemical and chemical reactions in food |
| 5430 | Sensory properties of food |
| 5510 | Physical processes-food |
| 5520 | Bioprocesses-food |
| 5530 | Chemical processes-food |
| 5540 | Processing efficiencies-food |
| 5550 | Product handling, packaging and storage-food |

| Code | Description |
|-------------|--|
| 5600 | Non-food products |
| 5700 | Developing non-food products |
| 5800 | Identification, measurement, and maintenance of quality |
| 5900 | Improving marketing efficiency |
| 6200 | Foreign trade, market development and competition |
| 6310 | Nutrient composition of food |
| 6320 | Human nutrition requirements |
| 6330 | Food fortification, enrichment and improvement |
| 6340 | Food consumption patterns and use |
| 6360 | Metabolism and function of nutrients in food |
| 6370 | Human nutrition and behavior |
| 6380 | Nutrition monitoring and surveillance |
| 6390 | Eating quality of food |
| 6450 | Quality of management and use of personal, domestic, and other resources |
| 6500 | Description, inventory and trends |
| 6740 | Adjust to economic change |
| 7500 | Development of research equipment and technology |
| 9900 | General activities (Headquarters use only) |

Subject of Investigation Codes (SOI)

| SOI Code | Description |
|-----------------|---|
| 0110 | Soil |
| 0120 | Land |
| 0199 | Soil and land, general |
| 0210 | Water resources |
| 0310 | River basins |
| 0320 | Watersheds |
| 0330 | Wetland and riparian systems |
| 0399 | Watersheds and river basins, general |
| 0410 | Air |
| 0420 | Weather |
| 0430 | Climate |
| 0440 | Solar radiation |
| 0499 | Atmosphere, general/other |
| 0510 | Wilderness |
| 0520 | Campgrounds and picnic areas |
| 0530 | Parks and urban green space |
| 0599 | Recreational resources, general other |
| 0610 | Conifer forests of the North |
| 0611 | Conifer forests of the South |
| 0612 | Conifer forests of the West |
| 0613 | Mixed conifer-broadleaf forests |
| 0620 | Broadleaf forests of the North |
| 0621 | Broadleaf forests of the South |
| 0622 | Broadleaf forests of the West |
| 0630 | Chaparral and shrub lands |
| 0640 | Tropical forests |
| 0650 | Wood and wood products |
| 0660 | Paper and pulp derived products |
| 0670 | Short rotation woody crops, including holiday trees |
| 0680 | Other products of the forest |
| 0699 | Trees, forests, and forest products, general |
| 0710 | Desert and semidesert shrub land and shinnery |

| SOI Code | Description |
|-----------------|---|
| 0720 | Pinyon-juniper |
| 0730 | Mountain grasslands, meadow, and alpine |
| 0780 | Grasslands, other |
| 0790 | Rangelands, other |
| 0799 | Rangelands and grasslands, general |
| 0810 | Finfish |
| 0811 | Shellfish |
| 0812 | Fish habitats |
| 0819 | Natural fisheries, other |
| 0820 | Wild birds |
| 0830 | Wild animals |
| 0840 | Fur-bearing animals |
| 0850 | Wildlife habitats |
| 0860 | Endangered species |
| 0899 | Wildlife and natural fisheries, general/other |
| 0910 | Grapefruit |
| 0920 | Orange |
| 0930 | Lemon |
| 0999 | Citrus, general/other |
| 1010 | Banana |
| 1020 | Pineapple |
| 1030 | Papaya |
| 1040 | Mango |
| 1050 | Date |
| 1060 | Kiwi |
| 1099 | Tropical/subtropical fruit, general/other |
| 1110 | Apple |
| 1111 | Apricot |
| 1112 | Cherry |
| 1113 | Nectarine |
| 1114 | Peach |
| 1115 | Pear |
| 1116 | Plum |
| 1119 | Deciduous tree fruits, other |
| 1120 | Blueberry |

| SOI Code | Description |
|-----------------|---|
| 1121 | Cranberry |
| 1122 | Strawberry |
| 1123 | Raspberry |
| 1129 | Berries and cane fruits, other |
| 1130 | Table grapes |
| 1131 | Wine grapes |
| 1132 | Raisin grapes |
| 1139 | Grapes, other |
| 1199 | Deciduous and small fruits, general/other |
| 1210 | Filbert |
| 1211 | Pecan |
| 1212 | Almond |
| 1213 | Walnut |
| 1219 | Edible tree nuts, general/other |
| 1310 | Potato |
| 1410 | Beans (dry) |
| 1411 | Beans (fresh, fresh-processed) |
| 1412 | Peas (dry) |
| 1413 | Peas (fresh, fresh-processed) |
| 1414 | Lentil |
| 1419 | Leguminous vegetables, other |
| 1420 | Melons (includes cantaloupe, muskmelon, watermelon) |
| 1421 | Cucumber |
| 1429 | Cucurbits, other (includes pumpkin, squash, gourd) |
| 1430 | Greens and leafy vegetables (includes endive, lettuce, spinach, turnip-greens, celery, rhubarb, parsley, asparagus) |
| 1440 | Cole crops (includes cabbage, kale, broccoli, brussels sprouts, cauliflower, kohlrabi) |
| 1450 | Sweet potato |
| 1451 | Onion, garlic, leek, shallot |
| 1452 | Carrot |
| 1453 | Yam |
| 1454 | Taro |
| 1455 | Cassava (or manioc) |
| 1459 | Rhizomes, tubers, bulbs, and root crops, general/other (for potato use 1310) |

| SOI Code | Description |
|-----------------|---|
| 1460 | Tomato |
| 1461 | Peppers |
| 1462 | Eggplant |
| 1469 | Solanaceous and related crops, general/other (for potato use 1310) |
| 1470 | Mushrooms and other edible fungi |
| 1480 | Sweetcorn |
| 1499 | Vegetables, general/other |
| 1510 | Corn (for sweetcorn use 1480) |
| 1511 | Popcorn |
| 1520 | Grain sorghum |
| 1530 | Rice |
| 1540 | Hard red winter wheat |
| 1541 | Hard red spring wheat |
| 1542 | Soft red wheat |
| 1543 | Soft white wheat (includes club, western, soft white) |
| 1544 | Hard white wheat |
| 1545 | Durum wheat |
| 1549 | Wheat, other |
| 1550 | Barley |
| 1560 | Oats |
| 1570 | Rye |
| 1599 | Grain crops, general/other (includes buckwheat, millet, triticale) |
| 1610 | Pasture |
| 1620 | Warm season perennial grasses (includes dallisgrass, bluestems, bermudagrass) |
| 1621 | Cool season perennial grasses (includes bluegrass, bromegrass, fescue, orchardgrass, perennial ryegrass, timothy, wheatgrass) |
| 1629 | Perennial grasses, other |
| 1630 | Summer annual grasses (includes forage sorghums, sudangrass, sorghum-sudangrass hybrids) |
| 1631 | Winter annual grasses (includes annual ryegrass) |
| 1639 | Annual grasses, other |
| 1640 | Alfalfa |
| 1641 | Trefoil |
| 1642 | Red clover |

| SOI Code | Description |
|-----------------|--|
| 1643 | Crownvetch |
| 1644 | Winter annual legumes (includes subterranean clover, arrowleaf clover) |
| 1649 | Forage legumes, other |
| 1699 | Pasture and forage crops, general/other |
| 1710 | Upland cotton |
| 1711 | Long fiber cotton |
| 1719 | Cotton, other |
| 1720 | Kenaf |
| 1730 | Hemp |
| 1740 | Ramie |
| 1750 | Agave |
| 1799 | Fiber crops, general/other |
| 1810 | Cottonseed (for meal, oil, etc.) |
| 1820 | Soybean |
| 1830 | Peanut |
| 1840 | Castor |
| 1841 | Crambe |
| 1842 | Flax |
| 1843 | Safflower |
| 1844 | Sunflower |
| 1845 | Jojoba |
| 1846 | Coconut |
| 1847 | Palm |
| 1848 | Canola |
| 1849 | Cuphea |
| 1850 | Lesquerella |
| 1851 | Meadowfoam |
| 1852 | Rape |
| 1853 | Sesame |
| 1854 | Chinese tallow |
| 1855 | Tung |

| SOI Code | Description |
|-----------------|---|
| 1899 | Oilseed and oil crops, general/other |
| 1910 | Flue-cured tobacco |
| 1920 | Burley tobacco |
| 1930 | Cigar-type tobacco |
| 1999 | Tobacco, general/other |
| 2010 | Sugar beet |
| 2020 | Sugar cane |
| 2030 | Sweet sorghum |
| 2099 | Sugar crops, general/other |
| 2110 | Ornamental trees and shrubs |
| 2120 | Herbaceous perennials and decorative greens |
| 2121 | Cut flowers, foliage, and greens |
| 2122 | Potted plants |
| 2123 | Bedding/garden plants |
| 2129 | Florist crops, other |
| 2130 | Turf (includes bentgrass, bermudagrass, bluegrass, dichondra, fescue, ryegrass, zoysia) |
| 2140 | Ground covers |
| 2150 | Aquatic plants |
| 2160 | Arboreta and botanical gardens |
| 2199 | Ornamentals and turf, general/other (includes cacti) |
| 2210 | Chemurgic crops |
| 2220 | Medicinal crops, non-narcotic |
| 2230 | Hops |
| 2231 | Mint |
| 2232 | Coffee |
| 2233 | Cocoa |
| 2234 | Tea |
| 2235 | Herbs and spices |
| 2239 | Flavoring and beverage plants, other |
| 2240 | Guayule |

| SOI Code | Description |
|-----------------|---|
| 2241 | Hevea |
| 2242 | Gums |
| 2249 | Rubber, gum, and resin plants, other |
| 2299 | Miscellaneous and new crops, general/other |
| 2300 | Weeds |
| 2410 | Cross-commodity research—multiple crops |
| 2420 | Noncrop plant research |
| 2499 | Plant research, general |
| 3010 | Honey bees |
| 3020 | Honey and honey products |
| 3030 | Non-honey apiary products |
| 3090 | Other pollinators |
| 3099 | Bees, honey, and other pollinators, general |
| 3110 | Insects |
| 3120 | Spiders, mites, ticks, and other arthropods |
| 3130 | Nematodes |
| 3199 | Invertebrates, general/other |
| 3210 | Egg-type chicken, live animal |
| 3220 | Meat-type chicken, live animal |
| 3230 | Turkey, live animal |
| 3240 | Duck and goose, live animal |
| 3250 | Ratites (e.g., ostrich, emu, rhea), live animal |
| 3260 | Poultry meat |
| 3270 | Eggs |
| 3280 | Other poultry products |
| 3299 | Poultry, general/other |
| 3310 | Beef cattle, live animal |
| 3320 | Meat, beef cattle |
| 3330 | Other beef cattle products |
| 3399 | Beef cattle, general/other |
| 3410 | Dairy cattle, live animal |

| SOI Code | Description |
|-----------------|---|
| 3420 | Butter |
| 3430 | Cheese |
| 3440 | Meat, dairy cattle |
| 3450 | Milk |
| 3460 | Ice cream |
| 3470 | Other dairy cattle products |
| 3499 | Dairy cattle, general/other |
| 3510 | Swine, live animal |
| 3520 | Meat, swine |
| 3530 | Other swine products |
| 3599 | Swine, general/other |
| 3610 | Sheep, live animal |
| 3620 | Meat, sheep |
| 3630 | Wool fiber |
| 3699 | Sheep and wool, general/other |
| 3710 | Catfish |
| 3711 | Trout |
| 3712 | Salmon |
| 3173 | Striped bass |
| 3714 | Tilapia |
| 3715 | Baitfish (minnows and shiners) |
| 3716 | Ornamental finfish |
| 3719 | Other cultured finfish |
| 3720 | Crawfish |
| 3721 | Marine shrimp |
| 3722 | Freshwater shrimp |
| 3723 | Oysters |
| 3724 | Clams and mussels |
| 3725 | Ornamental shellfish |
| 3729 | Other cultured shellfish |
| 3799 | Cultured aquatic animals, general/other |

| SOI Code | Description |
|-----------------|--|
| 3810 | Horses, ponies, and mules |
| 3820 | Goats, meat and mohair |
| 3830 | Pets (companion animals) |
| 3840 | Laboratory animals |
| 3899 | Other animals, general |
| 3910 | Cross-commodity research—multiple animal species |
| 3999 | Animal research, general |
| 4010 | Bacteria |
| 4020 | Fungi (including yeast) |
| 4030 | Viruses |
| 4040 | Viroids, mycoplasmas, spiroplasmas, etc. |
| 4050 | Protozoa |
| 4099 | Microorganisms, general/other |
| 5010 | Food (not readily associated with specific plant and animal products) |
| 5110 | Clothing/apparel |
| 5120 | Textiles |
| 5199 | Clothing and textiles, general |
| 5210 | Fertilizers |
| 5220 | Pesticides (includes herbicides, insecticides, fungicides, etc.) |
| 5230 | Feed and feed additives |
| 5240 | Seeds and other plant propagules |
| 5299 | Agricultural supplies, general/other |
| 5310 | Machinery and equipment |
| 5320 | Houses (human residences), furniture, household equipment, non-textile furnishings |
| 5330 | Farm structures and related facilities |
| 5340 | Nonfarm structures and related facilities, including those used in marketing, storing, processing, and distributing functions, and for recreational uses |
| 5350 | Domestic and community water supply facilities and systems |
| 5360 | Drainage and irrigation facilities and systems |
| 5370 | Sewage and waste disposal facilities and systems |

| SOI Code | Description |
|--|--|
| 5399 | Structures, facilities, and equipment, general/other |
| 6010 | Individuals (as workers, consumers, members of society) |
| 6020 | The family and its members |
| 6030 | The farm as an enterprise |
| 6040 | Real estate |
| 6050 | Communities, areas, and regions, including states and their institutions and organizations |
| 6099 | People and communities, general/other |
| 6110 | Economy of the United States and sectors thereof |
| 6120 | International economy and sectors thereof |
| 6199 | Economy, general/other |
| 6210 | Farmer cooperatives |
| 6220 | Marketing, processing, and supply firms other than cooperatives |
| 6230 | Marketing systems and sectors thereof |
| 6299 | Marketing, general/other |
| (Use the following classifications only if the research is not targeted at one or more previously listed specific commodities/products or resources) | |
| 7010 | Biological cell systems |
| 7110 | Research on research management (not research management per se) |
| 7210 | Remote sensing equipment and technology |
| 7220 | Sensory evaluation/analysis methods (human senses) |
| 7299 | Research equipment and methods, general/other |
| 7310 | Experimental design and statistical methods |
| 7410 | General technology |

Mode Codes

Mode codes are groups of numbers that represent the Areas, Locations and Management Units of ARS. Each set of two numbers represents the following:

1st two digits = Area

2nd two digits = Location

3rd two digits = Center, Laboratory or Management Unit

4th two digits = Management Units

Mode codes are used throughout ARIS and for many other purposes, such as NFC personnel, Foundation Financial Information System (FFIS), and ARMPS.

Example: 6208-05-10, where 62 = Southern Plains Area; 08 = Lubbock, Texas; 05 = Cropping Systems Research Laboratory; and 10 = Cotton Production and Processing Research Unit.

Special Classification Codes

Farm Bill Purpose Codes

| Code | Description |
|-------------|---|
| FBP1 | Continue to satisfy human food and fiber needs. |
| FBP2 | Enhance the long-5term viability and competitiveness of food production and agricultural system of the United States within the global economy. |
| FBP3 | Expand economic opportunities in rural America and enhance the quality of life for farmers, rural citizens and society as a whole. |
| FBP4 | Improve the productivity of the American agricultural system and develop new agricultural crops and new uses for agricultural commodities. |
| FBP5 | Develop information and systems to enhance the environment and the natural resource base upon which a sustainable agricultural economy depends. |
| FBP6 | Enhance human health by fostering the availability and affordability of a safe, wholesome, and nutritious food supply that meets the needs and preferences of the consumer; and by assisting farmers and other rural residents in the detection and prevention of health and safety concerns. |

Agrichemicals Pest Control (AC)

Evaluation and use of commercially-produced chemicals to manage, suppress, or eradicate plant and animal pests, including insects, pathogens, nematodes, and weeds. The mode of action of the chemical can be direct toxic effect(s) on the pest, interference with normal biological development, or host changes. Development of technology for application of chemicals to reduce amount(s) used, increase their effectiveness against specific target pests, limit their potential hazardous effects on human health and the environment. The AC code is subdivided according to the following matrix.

| | 1 ACNP | 2 ACSC | 3 ACAT | 4 ACWQ |
|---------------|-------------------|-------------------|-------------------|-------------------|
| Insects (1) | 11 | 12 | 13 | 14 |
| Weeds (2) | 21 | 22 | 23 | 24 |
| Pathogens (3) | 31 | 32 | 33 | 34 |
| Nematodes (4) | 41 | 42 | 43 | 44 |

(1) Natural Products (ACNP): Identification, development and use of naturally-occurring products to manage plant and animal pests.

(2) Synthetic Chemicals (ACSC): Development and use of synthetic (i.e., non-naturally occurring) chemicals and products to manage plant and animal pests.

(3) Application Technology (ACAT): Development of technology for the application of agricultural chemicals to manage plant and animal pests and that results in increased effectiveness, reduced distribution in the environment, and reduced hazard to human health and the environment.

(4) Water Quality (ACWQ): Research on the development, evaluation, formulation, and application technology of agrichemicals to control/manage plant and animal pests.

Biofuels

| | |
|------|--|
| B1 | Alcohol Fuels |
| B101 | Alcohol-Feedstock-Crops: Development of plants with greater alcohol yields and improved production, harvesting/collection, handling and storage technologies for existing and new crops, residues and processing wastes. |
| B102 | Alcohol-Conversion: Development of improved technologies and processes for converting sugars, starches and cellulosic material into alcohol fuels, including evaluation of engine performance and emissions. |
| B103 | Alcohol-CoProducts: Studies on increasing the value and utilization of non-alcohol conversion residues. |
| B2 | Biodiesel/Other |
| B201 | Biodiesel/Other-Feedstock: Development of plants with greater oil yields and improved production, harvesting, handling and storage technologies for existing and new crops. Development of technologies and systems for collecting and handling animal fats for conversion to biodiesel. |
| B202 | Biodiesel/Other-Conversion: Development of technologies for producing improved biodiesel and biodiesel blend fuels and evaluation of engine performance and emissions. |
| B203 | Biodiesel/Other-CoProducts: Studies on increasing the value and utilization of non-oil conversion residues. |

Biological Control

Identification, development and use of naturally occurring or modified pathogens, parasites and predators, their genes or gene products, and other biologically-based methods to reduce the effects of undesirable organisms and to favor desirable organisms, such as crops, trees, animals, and beneficial insects and microorganisms.

The BC code is subdivided according to the following matrix:

| Pest | 1 BCC | 2 BCA | 3 BCCN | 4 BCM | 5 BCE | 6 BCGE | 7 BCNP | 8 BCBR | 9 BCTX |
|---------------|------------------|------------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Insects (1) | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Weeds (2) | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| Pathogens (3) | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
| Nematodes (4) | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |

(1) Classical Biological Control (BCC): Exploration, importation, and release of parasites, and predators into new geographical areas to reduce populations of pests..

(2) Augmentation Biological Control (BCA): Actions taken to increase the populations and beneficial effects of natural enemies, including parasites, predators, weed control agents, pathogens and microbial antagonists, and the products of these organisms.

(3) Conservation Biological Control (BCCN): Premeditated actions for protecting and maintaining natural enemy populations, generally involving manipulations of environmental factors.

(4) Microbial Biological Control (BCM): Identification, development, production, and application of microbial agents to control insects, weeds plant pathogens, and plant nematodes.

(5) Ecology of Biological Control Agents (BCE): Investigations into the factors which control plant disease epidemics, insect disease epizootics, and regulation of parasite and predator populations.

(6) Genetic Enhancement of Biological Control Agents (BCGE): Increasing the effectiveness of a biological control agent by genetic manipulation.

(7) Utilization of Natural Products for Pest Control (BCNP): Discovery, development, and use of plant and microbial products for control of pests.

(8) Basic Research (BCBR): Biochemistry, genetics, behavior and physiology of pathogens and pest and beneficial insects and microorganisms.

(9) Taxonomy (BCTX): Systematics of organisms and microorganisms associated with biocontrol programs.

Biotechnology (BT)

Use of living organisms, cells, subcellular organelles, and/or parts of those structures, as well as the molecules, to effect chemical or physical changes needed to generate new products for research and commercialization. Specifically, biotechnology is the use of genetically engineered recombinant nucleic acid molecules to effect desired changes in biological materials.

NOTE: IF A BIOSAFETY LEVEL OF 1 THROUGH 4 IS SPECIFIED FOR RESEARCH PROJECT, THE BRCOM (BIOSAFETY) CODE MUST ALSO BE USED IN CONJUNCTION WITH THE BT CODE.

The BT code is subdivided into 20 subcodes, as shown in the following matrix. Relevant BT subcode(s) for a particular project should be selected from the matrix, assigned percentages, and entered in the Special Classification section of **Form AD-417**. For example, a designation of BT12 - 30%, would indicate that 30% of a project effort involves DNA sequencing relating to research on plants. A single project may have more than one BT code, but the total cannot exceed 100%.

| | 1 NAPEM | 2 DS | 3 DPR | 4 PCT | 5 MA | 6 BFC |
|---------------------|--------------------|-----------------|------------------|------------------|-----------------|------------------|
| Plants (1) | BT11 | BT12 | BT13 | BT14 | BT15 | BT16 |
| Animals (2) | BT21 | BT22 | BT23 | BT24 | BT25 | BT26 |
| Insects (3) | BT31 | BT32 | BT33 | BT34 | BT35 | BT36 |
| *Microorganisms (4) | BT41 | BT42 | BT43 | BT44 | BT45 | BT46 |

(1) Nucleic Acid and Protein Engineering Modification (NAPEM): Gene splicing, vector fabrication, gene amplification, engineered gene deletions, recombinant nucleic activities, and other technologies with directed changes of nucleic acids and subsequent protein alterations and gene expression.

(2) DNA Sequencing (DS): Molecular gene mapping to describe the components of gene systems; i.e., promoters, enhancers, exons, introns, and other gene structures and their activities.

(3) DNA Probing and Restriction Fragment Length Polymorphism (DPR): Use of DNA segments and/or components for determination of homology of fragments between and among species of phylogenetic relations; population dynamics as associated with release experiments.

(4) Protoplast Fusion, Chromosome Transfer and Tissue Culture (PCT): Fusion of protoplasts and studies associated with the formation of whole organisms and derivatives thereof; isolation of whole or partial chromosomes and their transfer to cells or nuclei; formation of organisms in vitro or from single cell suspensions, tissues, callus, or other living cell structures.

(5) Monoclonal Antibody (MA): The technology to localize, quantify, and monitor the activities of molecules in living organisms.

(6) BFC?

*Microorganisms include bacteria, fungi, algae, virus particles, viroids, and protozoa.

| | |
|-------|---|
| BRCOM | Biosafety: To be used in conjunction with the BT code for those projects requiring identification of the biosafety level. Must have a BT code before using. |
| BTER | Biotechnology - Environmental Release: Research which involves Biotechnology as described above; and which includes environmental release as a part of the experimental plan. Must have a BT and BRCOM code before using. |

Biotechnology Risk Assessment (NEW)

| Code | Short Description | Long Description |
|------|--------------------------|---|
| BR11 | Risk/Plants/Environment | GMO Plants: Environmental Risk Assessment, Risk Mitigation |
| BR12 | Risk/Plants/Genetic | GMO Plants: Genetic Risk Assessment, Risk Mitigation |
| BR13 | Risk/Plants/Food Safety | GMO Plants: Food/Feed Safety Risk Assessment, Risk Mitigation |
| BR14 | Risk/Plants/Non-Food | GMO Plants: Nonfood Product Safety Risk Assessment, Risk Mitigation |
| BR21 | Risk/Animals/Environment | GMO Animals: Environmental Risk Assessment, Risk Mitigation |

| | | |
|------|---------------------------|---|
| BR22 | Risk/Animals/Genetic | GMO Animals: Genetic Risk Assessment, Risk Mitigation |
| BR23 | Risk/Animals/Food Safety | GMO Animals: Food/Feed Safety Risk Assessment, Risk Mitigation |
| BR24 | Risk/Animals/Non-Food | GMO Animals: Nonfood Product Safety Risk Assessment, Risk Mitigation |
| BR31 | Risk/Insects/Environment | GMO Insects: Environmental Risk Assessment, Risk Mitigation |
| BR32 | Risk/Insects/Genetic | GMO Insects: Genetic Risk Assessment, Risk Mitigation |
| BR33 | Risk/Insects/Food Safety | GMO Insects: Food/Feed Safety Risk Assessment, Risk Mitigation |
| BR34 | Risk/Insects/Non-Food | GMO Insects: Nonfood Product Safety Risk Assessment, Risk Mitigation |
| BR41 | Risk/Microbes/Environment | GMO Microbes: Environmental and Ecological Risks and Risk Mitigation |
| BR42 | Risk/Microbes/Genetic | GMO Microbes: Genetic Risk Assessment, Risk Mitigation |
| BR43 | Risk/Microbes/Food Safety | GMO Microbes: Food/Feed Safety Risk Assessment, Risk Mitigation |
| BR44 | Risk/Microbes/Non-Food | GMO Microbes: Nonfood Product Safety Risk Assessment, Risk Mitigation |

| | | Environmental | Genetic | Food/Feed Safety | Non-Food Product Safety |
|--------------------------|-------------|----------------------|----------------|-------------------------|--------------------------------|
| Class of Organism | Code | 1 | 2 | 3 | 4 |
| Plants | 1 | BR11 | BR12 | BR13 | BR14 |
| Animals | 2 | BR21 | BR22 | BR23 | BR24 |
| Insects | 3 | BR31 | BR32 | BR33 | BR34 |
| Micro-organisms | 4 | BR41 | BR42 | BR43 | BR44 |

Types of Research that might be categorized as Environmental Risk Assessment and Risk Mitigation, BR_1:

- Direct and indirect effects on non-target organisms and populations
- Evolution of resistant pest or pathogen populations
- Refuge design, modeling, and evaluation
- Optimization of pest protectant dose and distribution (spatial or temporal) within the hose
- Behavior of complex systems (e.g., multiple target pests, multiple host species for the pest (s), multiple pest protectant agents with different modes of action)
- Off-site impacts of GMO-specific farming practices, such as altered pesticide use patterns
- Altered soil processes, such as organic matter decomposition
- Other

Types of research that might be categorized as Genetic Risk Assessment and Risk Mitigation, BR_2:

- Unwanted gene or trait transfer (including selectable marker traits) through outcrossing, horizontal gene transfer, or other mechanisms
- Pleiotropy and negative gene interactions
- Development of stacked pest protectant genes with multiple modes of action
- Post-transformation breeding strategies
- Removal of unwanted DNA (selectable markers or other)
- Development of selectable markers not based on antibiotic or herbicide resistance
- Development of tissue- or development stage-specific gene promoters to modify spatial or temporal distribution of pest protectant agents within the hose
- Targeting specific genomic sites (including maternally inherited sites) for gene insertion
- Genetic control of reproductive potential (reproductive development, seed germination)
- Genetic stability of transformants
- Other

Types of research that might be categorized as Food/Feed Safety Risk Assessment and Risk Mitigation, BR_3:

- Allergens
- Toxins and anti-nutritive substances
- Altered populations of human pathogenic microbes
- Other

Types of research that might be categorized as Non-Food Product Safety Risk Assessment and Risk Mitigation, BR_4:

- Pathogenicity (e.g., recombinant live vaccines)
- Allergenicity (e.g., latex rubber)
- Toxicity
- Other

Conservation and Use of Energy

| | |
|-------------------------------------|-------------|
| Crops | |
| E1A1 | Production |
| E1A2 | Processing |
| E1A3 | Marketing |
| E1A4 | Consumption |
| Livestock | |
| E1B1 | Production |
| E1B2 | Processing |
| E1B3 | Marketing |
| E1B4 | Consumption |
| Forestry | |
| E1C1 | Production |
| E1C2 | Processing |
| E1C3 | Marketing |
| E1C4 | Consumption |
| Sectoral and Multi-Commodity | |
| E1D1 | Production |
| E1D2 | Processing |
| E1D3 | Marketing |
| E1D4 | Consumption |

| Community | |
|------------------|-------------------------------------|
| E1E1 | Housing, Equipment, and Furnishings |
| E1E2 | Rural Transportation |
| E1E3 | Rural Development |

Substitute by Renewable or Non-Critical Energy Sources and Forms

| Development of Energy and Petrochemical Substitutes from Biomass | |
|---|---|
| E2A1 | Agricultural Products and Residues |
| E2A2 | Forestry Products and Residues |
| E2A3 | Energy Farming Crops, Forests, and Microorganisms |
| Development of Technology (including equipment) for Use of Alternative Sources and Forms of Energy | |
| E2B1 | Solar |
| E2B2 | Geothermal |
| E2B3 | coal, Lignite, Oil Shale, Peat, etc. |
| E2B4 | Electricity |
| E2B5 | Waste Heat from Power Plants, etc. |
| E2B6 | Wind |
| Consequences of Energy Production, Availability, and Use | |
| E3A1 | Agriculture and Forestry |
| E3B1 | Other Socio-Economic |
| E3C1 | Natural Resources |
| E3D1 | Reclamation and environment Effects |

Entomology Research (ENT)

Research that emphasizes one or more approaches to expand existing knowledge in the fundamental and applied areas of the science of entomology as it relates to agricultural production and commodity protection, including protection of humans from nuisance and health threatening arthropods, with emphasis on beneficial and pest insects, mites, and ticks. * The ENT code is subdivided into 20 subcodes, as shown in the following matrix. Relevant ENT subcode(s) for a particular project should be selected from the matrix, assigned the percentage to which the project is devoted, and entered in the Special Classification section of Form AD-417.

| | (01) BISY | (02) GGP | (03) TC | (04) BCPH | (05) BRNE | (06) BEH | (07) EC |
|-------------|----------------------|---------------------|--------------------|----------------------|----------------------|---------------------|--------------------|
| Insects (1) | ENT101 | ENT102 | ENT103 | ENT104 | ENT105 | ENT106 | ENT107 |
| Mites (2) | ENT201 | ENT202 | ENT203 | ENT204 | ENT205 | ENT206 | ENT207 |
| Ticks (3) | ENT301 | ENT302 | ENT303 | ENT304 | ENT305 | ENT306 | ENT307 |

| | (08) VDT | (09) RNMP | (10) TAR | (11) HP/AR | (12) NPPC | (13) BC | (14) BBC |
|-------------|---------------------|----------------------|---------------------|-----------------------|----------------------|--------------------|---------------------|
| Insects (1) | ENT108 | ENT109 | ENT110 | ENT111 | ENT112 | ENT113 | ENT114 |
| Mites (2) | ENT208 | ENT209 | ENT210 | ENT211 | ENT212 | ENT213 | ENT214 |
| Ticks (3) | ENT308 | ENT309 | ENT310 | ENT311 | ENT312 | ENT313 | ENT314 |

| | (15) (A/SIT) | (16) CC | (17) PMC | (18) IPM/E | (19) MS | (20) ECN |
|-------------|-------------------------|--------------------|---------------------|-----------------------|--------------------|---------------------|
| Insects (1) | ENT115 | ENT116 | ENT117 | ENT118 | ENT119 | ENT120 |
| Mites (2) | ENT215 | ENT216 | ENT217 | ENT218 | ENT219 | ENT220 |
| Ticks (3) | ENT315 | ENT316 | ENT317 | ENT318 | ENT319 | ENT320 |

*Although entomology is defined as that branch of biological science dealing with insects, mites, and ticks, including the use of molecular genetic techniques.

(01) Biosystematics (BISY): Research to develop knowledge of taxonomy and systematics of insects, mites, and ticks, including the use of molecular genetic techniques.

(02) Genetics and Germplasm Preservation (GGP): Fundamental research to develop advanced techniques, except host-plant/animal resistance, for managing insect, mite, and tick pests or improving beneficials, including entomopathogens, through increasing the knowledge of their genetics and through fundamental research on genetic engineering and other genetic methods for manipulation of genes, by population genetic studies, and by acquisition characterization, preservation, selection, recombination, and mapping of genetic material, and through studies of the structural organization of the nuclear and organic genomes.

(03) Tissue Culture (TC): Research to develop technologies for the in vitro culture of insect, mite and tick cells and tissues, including the production of fastidious entomopathogens in tissue culture.

(04) Biochemistry and Physiology (BCPH): Fundamental research to develop knowledge about molecular and cellular processes, including biochemical pathways in insects, mites and ticks; this area includes fundamental research on structure, function and metabolism of proteins, lipids, and carbohydrates, the exoskeleton, differentiation, and morphogenesis, and general physiological processes at the organ and tissue levels.

(05) Bioregulation and Neurobiology (BRNE): Fundamental research to develop knowledge of the role of neurohormones and other hormones, and bioregulation of the life processes in insects, ticks and mites; this area includes research on secretion and metabolism of hormones and their action on membranes, and general neurobiology, including regulatory neurochemicals, functional morphology, and intrinsic and extrinsic regulation.

(06) Behavior (BEH): Fundamental research to develop knowledge of reproduction and other behaviors, including host-related behaviors, neural programming, integration, and coordination of behaviors, chemical and biological mechanisms of plant/animal/pest interactions, both intraspecific and interspecific interactions; this area includes related fundamental research such as isolation, characterization, and synthesis of semiochemicals (pheromones and allelochemicals), and also includes fundamental research on arrestants and locomotor, feeding, mating, and oviposition stimulants.

(07) Ecology (EC): Investigations into factors which regulate insect, mite and tick populations, factors involved in sudden and destructive insect population buildups, factors that predispose populations to expand and migrate, meteorological factors involved in insect dispersal and deposition, and research on the effects of cropping and tillage systems and how these effects affect population status.

(08) Vector/Disease Organism Transmission (VDT): Fundamental research to identify vectors of plant and animal pathogens and mechanisms of transmission, research to characterize factors involved in transmission, research to identify and analyze for the presence of pestborne disease organisms, and research to increase knowledge of the biology and ecology of vectors and fundamental principles for control of vectors.

(09) Rearing, Nutrition and Mass Propagation (RNMP): Research to increase knowledge about nutrition and suitable requirements for rearing and mass propagation of insects, mites, and ticks, including beneficials, and for the development of improved technologies.

(10) Mode of Action, Resistance, Toxicology and Fate of Insecticides, Acaracides, Fumigants, and Repellents (IAR): Fundamental research to increase the knowledge about the nature of resistance and how to retard its development, and about the modes of action and metabolism at the cellular and subcellular level. Research to develop suitable bioassays and analytical methods, new chemical functions, including repellents and fumigants, research on minor-use pesticides, and research on degradation and fate of these pesticides in the environment.

(11) Host-Plant/Animal Resistance (HP/AR): Breeding, selection, and/or genetic engineering of plants and animals for resistance to insects, mites, and ticks.

(12) Natural Products/Phytochemicals Research (NPPC): Fundamental research to discover and characterize plant and microbial products for control of insects, mites, and ticks.

(13) Traditional Biocontrol (BC): Applied research on the use of predators, parasites, parasitoids, pathogens, and competitors to reduce the harmful effects of insects, mites, and ticks.

(14) Biologically-Based Control Methodology (BBC): Applied research on the use and application of biological-based methods (hormones, antimetabolites, feeding deterrents, pheromones and allelochemicals [semiochemicals] and other naturally-produced chemicals, host-resistance, autocidal methods, etc.), other than traditional biocontrol agents, to reduce or eliminate the harmful effects of insects, mites, and ticks. This area includes the development of dispensers, traps, monitoring devices, etc., and studies on detection and survey methodology.

(15) Autocidal/Sterile Technology Research (A/SIT): Applied research that employs insects, mites or ticks to destroy its own kind, or to bring about the self-destruction of the species.

(16) Chemical Control Methodology (CC): Applied research that utilizes or aids in the development of synthetic organic or inorganic chemicals (non-naturally occurring) for controlling insects, mites, and ticks, including improved fumigation and pesticide application technology.

(17) Physical and Mechanical Control Methodology (PMC): Applied research that employs physical and mechanical methodology and/or purposeful manipulation of the environment to make it less favorable, thereby exerting economic control or reducing rates of insect, mite, or tick increase and damage, e.g., modifications of the planting, growing, cultivating and tilling, or harvesting of crops, sanitation, animal/crop rotation, land, livestock, and tree management, trap crops, pruning and defoliating, water management, heat, cold radiation, acoustical detection, etc.

(18) IPM, Area-Wide Suppression or Eradication (IPM/E): Integrated and other suitable related applied research control measures or strategies for management to maintain pest populations below damaging levels, and/or suppression or eradication of insects, mites, and ticks, based on environmental/cultural manipulations, resistance varieties or breeds, use of natural enemies and biologically-based methods, pest-free zones, judicious use of chemical pesticides, genetic control, regulatory practices, and other means that are environmentally sound, and economically and socially acceptable; this requires actions tailored to specific quantitative data on insect damage (see MS & ECN).

(19) Models and Systems (MS): Research to develop and evaluate models, including predictive types, for pest - plant/animal - environmental integration, including vector-disease interaction, and control agent (s) interaction in order to facilitate the development of a systems approach to maximizing plant/animal production and protection and environmental compatibility (related to IPM/E).

(20) Economics (ECN): Research to evaluate the economic advantages, disadvantages, and implementation feasibility of emerging IPM established practices (related to IPM/E).

Integrated Pest Management (IPM)

| | |
|------|---|
| IPM1 | IPM Systems Research, Level: Consists of research to integrate two or more control techniques to manage one or more species of the same single grouping of pests, such as weeds (e.g., pigweed, crabgrass ragweed), insects, nematodes, or diseases. Such programs are referred to as integrated weed management systems, integrated insect management systems, integrated nematode management systems, and integrated disease management systems. |
| IPM2 | IPM Systems Research, Level II: Consists of research to integrate two or more management systems for two or more pest groups, such as diseases and insects; or diseases, weeds, insects and nematodes. |
| IPMB | Basic Research: Generates the knowledge required to understand pests and to develop national control strategies for individual pests and pest complexes. Examples are research on life cycles, population dynamics, biochemical nature of resistance, mode of action of pesticides, epidemiology, and ecology. |
| IPMC | Control Component Research: Develops specific control techniques and related technologies, such as pest-resistant crop cultivars and livestock breeds; and biological-, chemical-, cultural-, and mechanical-control methods. |
| IPME | Economic Research: Evaluates the economic advantages, disadvantages, and implementation feasibility of emerging IPM methods, systems, and strategies related to established practices. |

Pest* Control (PC) Codes**

| Code | Pest Control Activity/Description |
|------|--|
| PC1 | Fundamental Research on Pests: Studies that generate the knowledge required to understand pests and the potential impact of pest control strategies, and that will lead to the development and use of control strategies for individual pests and pest complexes. |
| PC2 | Traditional Biological Control: Basic and applied research on the discovery, development and use of parasites, parasitoids, predators, pathogens, competitors, and other beneficial organisms to reduce the harmful effects of pests. This includes the exploration, importation, and release of biocontrol agents, augmentation and conservation biological control tactics, and mass propagation. |
| PC3 | Miscellaneous Biologically-Based (Biorational) Control***: Basic and applied research on the discovery, development, use and application of biological-based methods (e.g., hormones, antimetabolites, feeding deterrents, repellents, pheromone and allelochemicals [semiochemicals] and other naturally-produced chemicals, attracticides, the use of traps and similar devices, autocidal methods/ sterile technology, etc.), to reduce or eliminate the harmful effects of pests. |
| PC4 | Host Resistance: Basic and applied research on the discovery, development, use and application of pest-resistant crop cultivars and animal breeds, including genetically-engineered plants and animals resistant to pests. This tactic is placed by some experts under cultural control, but will be kept separate for this scheme. |
| PC5 | Cultural Control: Basic and applied research on the discovery, development, use and application of tactics such as crop rotation, intercropping, tillage approaches, cover crops or mulches, managing irrigation and drainage, fertilization, removal of crop residues, and other field sanitation procedures, altering planting and harvesting schedules, habitat management, and similar strategies for pest control purposes. |
| PC6 | Chemical Control: Basic and applied research that utilizes or aids in the discovery and development of synthetic organic (non-naturally occurring) or analogs of natural chemicals (e.g., pyrethroids, insect growth regulators, etc.), or inorganic chemicals for controlling animal and plant pests, including fumigation (e.g., methyl bromide), development and use of improved chemical pesticide application technology. This includes the IR-4 Minor-Use program. |
| PC7 | Physical and Mechanical Control: Basic and applied research on the discovery, development and use of physical and mechanical methodology, thereby exerting economic control or reducing rates of pest contamination and damage, e.g., heat/cold treatment, electromagnetic energy (radio, infrared, visible and ultraviolet, and ionizing radiation), acoustical detection, vacuum collection, screening, trapping and other exclusion tactics, etc. |

| | |
|------|---|
| PC8 | Models and Expert Systems: Basic and applied research on models, including predictive types, and decision support systems for pest-plant/animal - environmental integration, including vector-disease interaction, and control agent(s) interaction in order to facilitate the development of a systems approach to maximizing plant/animal protection and environmental compatibility. |
| PC9 | Integrated Pest Management (IPM): Consists of research to integrate two or more control techniques to manage one or more species of the same single grouping of pests, such as weeds (e.g., pigweed, crabgrass, ragweed), insects, nematodes, or diseases. Such programs are referred to as integrated weed-management systems, integrated insect-management systems, integrated nematode-management systems, and integrated disease-management systems, or consists of research to integrate two or more management systems for two or more pests groupings, such as diseases and insects; or diseases, weeds, insects, and nematodes. The aim is to maintain pest populations below damaging levels, and/or suppress or eradicate pests, based on environmental/cultural manipulations, resistant varieties or breeds, use of natural enemies and biologically-based methods, pest-free zones, judicious use of chemical pesticides, genetic control, detection and monitoring, regulatory practices, and other means that are environmentally sound, and economically and socially acceptable; this requires actions tailored to specific pests, crops, locations, and market conditions based on quantitative data on pest damage. Strategies may be carried out on an areawide concept basis. They also may be designed to fit organic farming criteria. |
| PC10 | Economics of Pest Control: Research to evaluate the economic advantages, disadvantages, and implementation feasibility of emerging IPM and other pest control methods, systems, and strategies related to established practices. |
| | <p>*Pests includes insects, mites, ticks, and related arthropods, animal and plant diseases-causing organism (microbes, parasites and nematodes), and weeds.</p> <p>**Replaces former PST and IPM codes; Pest Control (PC) codes must not total more than 100% on any one CRIS project. Related matrix codes such as Pest Management (PM), Agrichemicals Pest Control (AC), Biological Control (BC), Entomology Research (Ent), Biotechnology (BT), etc., are still to be used as special classification coding and for tracking work on individual categories of pests and approaches.</p> <p>***Traditional biological control, host resistance, cultural control, and some categories of pesticidal chemicals are excluded under this activity, since they are included elsewhere in the scheme (see PC2, PC4, PC5, and PC6).</p> |
| | |

Pest Management (PM)

Development of strategies for control of plant and animal pest species (including insects, pathogens, nematodes, and weeds). These strategies include integration of cultural practices, biological or biologically-based control, genetic manipulation techniques, and use of chemicals as needed. These strategies are based on the interrelationships among the pests, the environment, and pest hosts. The PM code is subdivided according to the following matrix:

| Pest | 1 PMCC | 2 PMCP | 3 PMBC | 4 PMGM | 5 PMBR | 6 PMWQ |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Insects (1) | 11 | 12 | 13 | 14 | 15 | 16 |
| Weeds (2) | 21 | 22 | 23 | 24 | 25 | 26 |
| Pathogens (3) | 31 | 32 | 33 | 34 | 35 | 36 |
| Nematodes (4) | 41 | 42 | 43 | 44 | 45 | 46 |

(1) Chemical Control (PMCC): Use of naturally-occurring synthetic chemicals to control and manage plant and animal pests.

(2) Cultural Practices (PMCP): Development of cultural and management practices to reduce losses due to plant and animal pests.

(3) Biological control (PMBC): Identification, development and use of naturally-occurring or modified pathogens, parasites and predators, their genes or gene products, and other biologically-based methods to reduce the effect of undesirable organisms and to favor desirable organisms such as crops, trees, animals, and beneficial insects and microorganisms.

(4) Genetic Modification (PMGM): Manipulation of the genetic composition of pests and/or their hosts to reduce losses due to plant and animal pests.

(5) Basic Research (PMBR): Development of fundamental knowledge of the biology, molecular biology, genetics, molecular genetics, behavior, biochemistry, and physiology of plant and animal pests.

(6) Water Quality (PMWQ): Research on pesticide management practices, technology, and formulation.

Pesticide Codes

| | |
|------|--|
| PST1 | Target I, Fundamental Biology - Studies of the taxonomy, biology, ecology, physiology, pathology, metabolism, and nutrition of pests and host plants and animals. |
| PST2 | Target II, Improve Means of Nonpesticidal Control - Control of pests by nonpesticidal means is the ultimate goal - through pest-resistance; attractants and repellents; predators, parasites, and pathogens of pests; and physical control practices. |
| PST3 | Target III, Improve Pesticide Use Patterns - Development of (a) safer, more effective ways to use pesticides by timing, formulations, and modes of application; (b) improved detection and measurement of pesticides and metabolites; and (c) ways to eliminate or minimize residues. |
| PST4 | Target IV, Toxicology, Pathology, Metabolism, and Fate of Pesticides - Applied or fed to laboratory and farm animals, or applied to plants. Determination of residues in organisms, modes of metabolic breakdown and metabolic products. |
| PST5 | Target V, Economics of Pest Control - Use, supply, demands and requirements for pesticides. |

Range and Pasture Research Codes

| Conservation, Development, and Use of Soil, Water, and Other Natural Resources | |
|--|--|
| G101 | Site Classification |
| G102 | Condition and Trend |
| G103 | Sampling and Monitoring |
| G104 | Climate and Weather |
| G105 | Water for Farmsteads and Livestock |
| G106 | Control and manage Water Runoff Quality and Quantity |
| G107 | Reduce Soil Erosion |
| G108 | Conserve and Use Fish and Wildlife Resources |
| G109 | Conserve and Manage Fish and Wildlife Habitat |
| G110 | Reclaim and Use Disturbed Land |
| G111 | Conserve and Use Land |
| Protection of Man, Commodities, Resources and Their Products from Losses, Damage, or Discomfort | |

| | |
|--|--|
| G201 | Methods and Equipment for Chemical Control of Weeds and Brush |
| G202 | Methods and Equipment for Nonchemical Control of Weeds and Brush |
| G203 | Evaluate Pesticides and Their Residues |
| G204 | Manage or Control Wildlife Damage |
| Production and Quality Improvement | |
| G301 | Germplasm Collection and Evaluation |
| G302 | Taxonomy and Geographical Distribution |
| G303 | Morphology, Anatomy, Histology, and Cytology |
| G304 | Production, Growth, and Development, including Seed Production and Quality |
| G305 | Ecology and Population Dynamics |
| G306 | Animal Behavior |
| G307 | Chemical Composition and Quality |
| G308 | Photosynthesis |
| G309 | Nitrogen Fixation |
| G310 | Other Metabolic Processes |
| G311 | Water Use Efficiency |
| G312 | Assess and Predict Nutrient Needs of Plant |
| G313 | Improve Breeds and Varieties |
| G314 | Genetics and Germplasm Enhancement |
| G315 | Grazing Methods and Techniques |
| G316 | Seeding and Planting Technologies |
| G317 | Technology for Use of Fire |
| G318 | Equipment and Techniques for Range and Pasture |
| G319 | Structures and Facilities for Handling Animals |
| General Methodology, Technology, and Evaluation | |
| G401 | Effect of Policy on Land Use |
| G402 | Socio-Economic Effects of Land Use |

Water Quality

| | |
|-------|--|
| WQBIC | Research on integrated pest management strategies, host plant resistance, and biological methods for controlling plant and animal pests that is directed toward maintaining or improving the quality of groundwater and surface water through the reduction or replacement of pest control chemicals that are known contaminants of these resources. |
| WQGWN | Research on plant nutrient management, fertilizer application methods, crop rotations, water management, nutrient leaching models, and associated physical, chemical, and biological processes that is directed toward understanding, predicting, and controlling the movement of plant nutrients into groundwater. |
| WQGWP | Research on pesticide management practices, pesticide application technology, formulation, cropping practices, pesticide leaching models, and associated physical, chemical, and biological processes that is directed toward understanding, predicting and controlling the movement of pesticides to groundwater. |
| WQGWX | Research on resource management practices and on the chemistry of salts and toxic chemicals in fresh water environments and in saturated and unsaturated soils that is directed toward understanding, predicting, and controlling contamination of groundwater by salts and toxic elements. |
| WQSWN | Research on nutrient management practices, fertilizer application methods, crop rotations, water management, nutrient runoff models, and associated physical, chemical, and biological processes that is directed toward understanding, predicting, and controlling the movement of plant nutrients into surface water bodies such as streams, lakes, reservoirs, and estuaries. |
| WQSWP | Research on pesticide management practices, pesticide application technology, formulation, cropping practices, and pesticide runoff models, and associated physical, chemical and biological processes that is directed toward understanding, predicting, and controlling pesticide concentrations in surface water bodies, including streams, lakes, and estuaries. |
| WQSWS | Research on resource management practices, and on erosion and sedimentation processes that is directed toward improving our ability to understand, predict, and control the movement of sediments into and within surface water bodies such as streams, lakes, reservoirs, and estuaries. |
| WQSWX | Research on resource management practices and on the chemistry of salts and toxic elements in fresh water environments and in saturated and unsaturated soils that is directed toward understanding, predicting, and controlling the contamination of surface water bodies such as streams, lakes and reservoirs. |

Water Resources Codes

| | |
|---|------------------------------------|
| W1A | Properties of Water |
| W1B | Solution and Suspension |
| Water Cycle | |
| W2A | Water Cycle |
| W2B | Precipitation |
| W2C | Snow, Ice, Frost |
| W2D | Evaporation, Transpiration |
| W2E | Stream Flow |
| W2F | Groundwater |
| W2G | Water in Soils |
| W2H | Lakes |
| W2I | Water and Plants |
| W2J | Erosion and Sedimentation |
| W2K | Chemical Processes |
| W2L | Estuarine Problems |
| Water Supply Augmentation-Conservation | |
| W3A | Saline Water Conversion |
| W3B | Water Yield Improvement |
| W3C | Use of Water with Impaired Quality |
| W3D | Conservation - Domestic Use |
| W3E | Conservation - Industry Use |
| W3F | Conservation - Agricultural |
| Water Quality Management Control | |
| W4A | Control Water on Land |
| W4B | Groundwater Management |

| | |
|--|--------------------------------------|
| W4C | Man's Activity on Water |
| W4D | Watershed Protection |
| Water Quality Management Protection | |
| W5A | Pollutant Identification |
| W5B | Pollutant Source and Fate |
| W5C | Pollutant Effects |
| W5D | Waste Treatment Process |
| W5E | Disposal of Waste |
| W5F | Water Treatment |
| W5G | Water Quality Control |
| Water Resources Planning | |
| W6A | Techniques of Planning |
| W6B | Evaluation Process |
| W6C | Costs, Pricing, Repaying |
| W6D | Water Demand |
| W6E | Water Law/Institutions |
| W6F | Nonstructural Alternatives |
| W6G | Ecologic Impact on Water Development |
| Resources Data | |
| W7A | Network Design |
| W7B | Data Acquisition |
| W7C | Evaluation, Processing, Publication |
| Engineering Works | |
| W8A | Engineering design |
| W8B | Materials |
| W8C | Construction Operation |
| Manpower, Grants, Facilities | |
| W9A | Educational - Extramural |
| W9B | Educational - Inhouse |
| W9C | Facilities |
| W9D | Grants and Contract Allotments |

Miscellaneous Special Codes

| | |
|------------------|--|
| BARD | To be used on all projects funded by the Binational Agricultural Research and Development Fund. |
| BSF | Small Farm Research: That portion of a research activity which may ultimately have specific application to agricultural production on small farms. |
| CRG | To be used on all projects funded by the National Research Initiative Competitive Grants Program - CSREES. |
| CRADA | Cooperative Research and Development Agreement |
| PAT | Pesticide Application Technology |
| X1890 | Cooperative Research with the 1890 Land Grant Institutions |
| XACU | Animal Care and Use: Must be used if a vertebrate animal is used in conducting the research |
| XCO ² | Carbon Dioxide: Refers to research on the carbon cycle, carbon dioxide and climate, and vegetation response to carbon dioxide. If CO ² is a different or independent variable in studies related to one of these three areas, it should be coded |
| XFI | Food Irradiation: Use of irradiation for the purpose of preservation and/or microbial control of foods (e.g., meat, poultry, grains, fruits, and vegetables); can include irradiation of packaging materials and/or machinery when such use is indicated to achieve control in foods. |
| XHMR | Human Health and Safety: Research applicable to human health, including food safety and health; and, environmental pollution and water quality research having human health applications. Excludes animal health research unless initiated primarily to protect human health. |
| XWR | Weather-Related: Having a relationship to interaction of plants, animals, man, or other organisms with macro- or microclimatological or meteorological factors; amelioration of hazards of, or damage by, lightning and other meteorological factors; weather modifications and related subjects. |

Biosafety Levels (BSL)*

Biosafety Level - A combination of work practices and physical containment requirements designed to reduce the risk of laboratory infection when working with infectious material. The degree of protection recommended is proportional to the risk associated with an agent. There are four biosafety levels with an agriculture modification to one of them them, BSL-3-Agriculture.

| | |
|----------|--|
| BSL-1 | Biosafety Level 1 is suitable for work involving well-characterized agents not known to consistently cause disease in healthy adult humans, and of minimal potential hazard to laboratory personnel and the environment. Work is generally conducted on open bench tops using standard microbiological practices. Special containment equipment or facility design is neither required nor generally used. The level of a high school biology laboratory. |
| BSL-2 | Biosafety Level 2 is similar to BSL-1 and is suitable for work involving agents of moderate potential hazard to personnel and the environment. These moderate risk organisms are found in the community, cause mild illness, and are treatable or preventable. Access is restricted and minimal protective clothing and equipment are employed. Work surfaces and waste items are decontaminated after use. Most research and diagnostic labors are at this level. |
| BSL-3 | Biosafety Level 3 practices, safety equipment, and facility design and construction are applicable to clinical, diagnostic, research or production facilities in which work is done with indigenous or exotic agents with a potential for aerosol transmission, and which may cause serious and potentially lethal infections. Precautions include inward directional airflow, separation from non-laboratory areas, and special laboratory protective clothing. |
| BSL-3-Ag | Biosafety Level-3-Agriculture. Because agriculture has a special concern for reducing the risk of environmental exposure, this BSL enhances containment described for BSL-3 by adding filtration of supply and exhaust air, sewage decontamination, exit personnel showers, and facility integrity testing. |
| BSL-4 | Designed for work with dangerous and exotic agents that pose high individual risk of life threatening disease, which may be transmitted via the aerosol route and for which there is no available vaccine or treatment. While there is no BSL-4 requirement for agricultural agents, recently two viruses have been discovered that are highly lethal for agricultural species and for humans (Nipah and Hendra viruses); and these can only be manipulated at laboratories having BSL-4 capability. |

Biosafety Levels, Risk Assessment, and Agent Summary Statements. *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, 4th Edition. Published by the Office of Biological Safety, Centers for Disease Control and Prevention. Stock number 017-040-00547-4, available from: U.S. Superintendent of Documents, U.S. Government.

*** The above Biosafety codes are for informational purposes and are to be included in the approach section of the 416, along with the Biosafety Certification date. These codes do not go on the 417.**

Foreign Country Codes

| Country | Code | Country | Code | Country | Code |
|----------------|------|---------------|------|--------------------|------|
| Antigua | 8045 | Great Britain | 8047 | Philippines | 8015 |
| Argentina | 8041 | Greece | 8021 | Poland | 8003 |
| Armenia | 8069 | Guadeloupe | 8037 | Romania | 8039 |
| Australia | 8025 | Guinea | 8011 | Russia | 8056 |
| Austria | 8026 | Haiti | 8038 | Sierra Leone | 8044 |
| Azerbaijan | 8051 | Hungary | 8050 | Slovak Republic | 8065 |
| Barbados | 8046 | India | 8001 | Slovenia | 8070 |
| Belarus | 8052 | Israel | 8009 | Spain | 8016 |
| Belgium | 8027 | Italy | 8029 | Sri Lanka (Ceylon) | 8008 |
| Belize | 8043 | Japan | 8013 | Sudan | 8040 |
| Bosnia | 8061 | Kazakhstan | 8053 | Sweden | 8017 |
| Brazil | 8031 | Korea | 8014 | Switzerland | 8018 |
| Burma | 8012 | Kyrgystan | 8054 | Taiwan | 8019 |
| Chile | 8032 | Latvia | 8068 | Tajlkistan | 8057 |
| Columbia | 8033 | Lithuania | 8067 | Tunisia | 8007 |
| Costa Rica | 8042 | Macedonia | 8062 | Turkey | 8020 |
| Croatia | 8063 | Mexico | 8035 | Turkmenistan | 8058 |
| Czech Republic | 8064 | Moldovia | 8055 | Ukraine | 8059 |
| Egypt (A.R.E.) | 8005 | Morocco | 8006 | United Kingdom | 8010 |
| Estonia | 8069 | Netherlands | 8028 | Uruguay | 8034 |
| France | 8023 | New Zealand | 8036 | Uzbekistan | 8060 |
| Finland | 8024 | Nigeria | 8048 | Venezuela | 8049 |
| Georgia | 8066 | Pakistan | 8002 | Yugoslavia | 8004 |
| Germany | 8022 | Peru | 8030 | | |
| | | | | | |

Appendix 5: Green Sheets

Instructions for Preparing Status of Program Significant Accomplishments (Green Sheets)

The Status of Program is a written, brief, factual statement of selected examples of the most significant “recent research progress and accomplishments during the past 12-month period.”

General Instructions:

1. Submit approximately 10 accomplishments per National Program Team (smaller National Programs may submit less than 10 and larger National Programs may submit a few more). Place the name of the program objective at the end of the accomplishment, e.g. Plant Sciences; Animal Sciences. Attached is a listing and description of the six objectives for your reference. **Group your accomplishments by the USDA/ARS Goals (list attached).** Once all accomplishments are compiled, each Goal will consist of approximately 20 accomplishments.
2. **Do not repeat items presented in the prior year’s “Status of Program.”** Prior years’ published Status of Program can be found in the prior year Explanatory Notes at www.npstaff.ars.usda.gov.
3. Accomplishments should include:
 - a. “Scope of Problem” on which research effort is currently being directed.
 - b. Description of the “Major Accomplishments” including:
 - new phases or work begun;
 - significant shifts or emphasis of research; and
 - highlight completion or termination of specific problem.
 - c. “Questions to be answered” should include:
 - What agricultural problem is being resolved?
 - How serious is the problem?
 - To date, what has ARS accomplished in solving the problem?
 - When do we expect to solve the problem?
4. Remember the audience when writing the accomplishments. Do use layman’s language. Do not use abbreviations or metric units.

Our accomplishments are published in the Agency’s annual budget submission to Congress and are read by a wide and diverse audience including non-scientists.

Formatting Requirements:

1. All narrative typing must be in Word, Times, 12 point. All titles should be in lower case, **not initial caps**.

2. Left Justification (ragged edge) and the following margins are mandatory.

Margins: Top: .5", Bottom: .75", Left: 1.75", Right: 1.25".

3. Use the following format for full reports of recent progress:

First Line - Accomplishment title underlined: Should reflect accomplishment(s) and impact. **Include the Program Objective at the end of the accomplishment**, such as Animal Sciences, or Soil, Water, and Air Sciences.

Sentence 2: Should state the problem.

Sentence 3 and 4: Should tell how and where accomplished.

Sentence 5: Should tell impact on problem and the users of the accomplishment, as well as the location responsible for the accomplishment.

Appendix 6: Briefing Paper Format

Briefing Paper Format

24, 2004

Robens
5381

Date: January

Contact Person: Jane F.
Telephone: 301-504-

Issue Briefing Paper - FY 2005

1. Subject: Animal Manure - Food Safety
2. Nature and Background of Issue:
 - " There is widespread agreement among scientists and health officials that animal manure represents a significant source of human pathogens.
 - " Untreated or improperly treated manure may contain pathogens and may contaminate crops intended for human consumption either by direct contact or by run off into produce growing areas or into water sources used for irrigation.
 - " The contamination of foods, including fresh fruits and vegetables, by pathogens originating from animal manure sources is a public health concern. Concern has been voiced about animal manure contributing to the spread of antibiotic resistance, however there is no data in this area.
 - " On-the-farm intervention strategies can reduce pathogen shedding by animals and effective manure storage, handling and treatment options can reduce pathogen populations in manure.
 - " EPA finalized its long proposed concentrated animal feeding operation (CAFO) rule on December 15, 2002. The rule combines changes to both the National Pollution Discharge Elimination System and the Effluent Limitation Guidelines for feedlots.
3. ARS Position:
 - " ARS recognizes the importance of reducing human pathogen populations in manure and the environment to improve food safety, and to a lesser extent the need to control residues of drugs, and environmental contaminants, including heavy metals in animal manures.
 - " ARS research will determine pathogen survival and dissemination in manure sources, composts, soil, and run off with particular attention to the potential for contamination of fresh produce.
 - " ARS research will also determine the effect of various animal production systems and will develop active and passive manure treatment including aeration, composting, etc., techniques that will reduce or eliminate

pathogens in manures from poultry, swine and cattle in a variety of production systems and environments.

" Ongoing ARS research programs to intervene in pathogen carriage by poultry, swine and cattle will also contribute significantly to reducing pathogens in animal manure.

4. Expected Outcomes and Recommended Action:

" Food safety, particularly of minimally processed or fresh produce, will be enhanced by ARS research to develop knowledge, techniques and processes to reduce dissemination of pathogens in animal manures or compost. Such knowledge and strategies can also reduce the potential for reinfection of food producing animals with zoonotic pathogens.

" Water and air quality will also be improved by reducing pathogens from manures.

5. Funding: FY 2004 (gross)
TOTAL \$7,705,600

Programs and Issues in Florida

1. ARS Programs: (Total 339 Staff, \$35.1 M) (94 SY)
 - " **Brooksville (14 FTE, \$1.3 M) (5 SY)**
Beef Cattle Research
 - " **Canal Point (25 FTE, \$2.7 M) (6 SY)**
Sugarcane Production Research
 - " **Fort Lauderdale (17 FTE, \$2.1 M) (6 SY)**
Invasive Plant Research Laboratory
 - " **Ft. Pierce (78 FTE, \$9.8 M) (22 SY)**
U.S. Horticultural Research Laboratory
 - Subtropical Insects Research
 - Subtropical Plant Pathology Research
 - Horticulture and Breeding Research
 - " **Gainesville (140 FTE, \$12.8 M) (37 SY)**
Center for Medical, Agricultural and Veterinary Entomology
 - Insect Behavior and Biocontrol Research
 - Chemistry Research
 - Imported Fire Ant and Household Insects Research
 - Crop Genetics and Environmental Research
 - Mosquito and Fly Research
 - " **Miami (50 FTE, \$4.0 M) (10 SY)**
Subtropical Horticultural Research
 - " **Winterhaven (15 FTE, \$2.4 M) (8 SY)**
Quality Improvement in Citrus and Subtropical Products Research

2. Issues:
 - Program Increases for FY 2004 (NTL):**
 - " Canal Point: \$322,088 for Sugarcane Variety Research.
 - o Fort Lauderdale: \$120,784 for Invasive Aquatic Weeds.
 - " Fort Pierce: \$402,611 for Fort Pierce Horticultural Research Laboratory;
\$80,522 for Pierce's Disease/Glassy-winged Sharpshooter.
 - " Gainesville: \$201,306 for Vector-Borne Diseases; \$201,306 for West Nile Virus.
 - " Winter Haven: \$322,088 for Citrus Waste Utilization.
 - FY 2005 Proposed Cuts (NTL):**

- Canal Point: \$1,129,866 for Sugarcane Variety Research.
- Fort Lauderdale: \$120,784 for Invasive Aquatic Weeds.
- Fort Pierce: \$243,906 for Citrus and Horticulture Research; \$1,206,494 for Fort Pierce Horticultural Research Laboratory; \$384,095 for Pierce's Disease/Glassy-winged Sharpshooter.
- Gainesville: \$443,815 for Biological Controls and Agricultural Research; \$1,134,972 for Mosquito Trapping Research/West Nile Virus; \$201,306 for Vector-Borne Diseases.
- Miami: \$682,442 for Coffee and Cocoa Research; \$224,167 for National Germplasm Resources Program.
- Winter Haven: \$322,088 for Citrus Waste Utilization; \$266,663 for Grapefruit Juice/Drug Interaction.

Major Issues/Significant Program Highlights:

- " The phase out of methyl bromide by 2005 for soil fumigation is estimated to result in losses exceeding \$400 million for Florida vegetable and strawberry growers. ARS scientists at Ft. Pierce conduct research to develop alternatives and conduct large-scale field demonstration trials on commercial vegetable farms to assist growers with the technology transfer. At Gainesville, research by ARS scientists and University of Florida collaborators focuses on explaining the reasons for poorer efficacy of alternative fumigants, and development of techniques or strategies for improving efficacy of alternative fumigants for pest control/management in high-value crops.

- " Citrus tristeza virus continues to be a threat, especially with the 1995 introduction of the brown citrus aphid, an efficient vector of the virus that is capable of transmitting severe virus strains that are not now widespread in Florida. ARS conducts research on CTV detection, characterization, epidemiology, insect transmission, biological and cultural control, and enhancement of scion and rootstock germplasm for resistance. The CTV eradication program in California makes extensive use of research results from the U.S. Horticulture Research Laboratory, Ft. Pierce.

- " Asian citrus canker, a bacterial disease, continues to spread despite efforts to contain it. The main inoculum source appears to be residential Dade and Broward counties of South Florida. It has spread to commercial orchards and additional residential areas of Martin, Desoto, Collier, Hendry, Palm Beach, Manatee, Brevard, Broward, Hillsborough, and Orange counties. It is a quarantine pest for many countries and other U.S. states. ARS scientists at the U.S. Horticultural Research Laboratory, Ft. Pierce, assist State and USDA, APHIS officials in assessing the increase and spread of the disease, diagnosis, risk management, and eradication. Research at the U.S. Horticultural Research Laboratory in Fort Pierce led to the establishment and adoption of the 1,900 ft. removal radius for eradication policy. Recently, the Florida Supreme Court upheld the 1,900 ft. rule in court challenges.

- " The citrus root weevil (*Diaprepes*) has now spread to most citrus-producing counties and continues to cause extensive damage (> \$75 million/year). ARS conducts research on the control of *Diaprepes* at the U.S. Horticultural Research Laboratory, Ft. Pierce, and participates in the Florida Diaprepes Task Force and 5-Year Action Plan. Research at Ft. Pierce focuses on the development of tolerant or resistant rootstocks, application of kaolin clay based particles to deter oviposition, sexually transmitted viruses, trap cover crops and toxic Bt strains.
- " The seedless Clementines currently produced in Spain now account for over 50 percent of the world tangerine market and has severely impacted tangerine production in the United States. ARS conducts research at the U.S. Horticultural Research Laboratory, Ft. Pierce, to develop seedless tangerine varieties that will be competitive in the domestic and world markets. The "Sunburst" tangerine developed by the ARS lab in Ft. Pierce has outstanding postharvest traits but has too many seeds. Scientists at Ft. Pierce are presently evaluating irradiated "Sunburst" plant material for seedless traits.
- " Everglades restoration - ARS participates in the South Florida Ecosystem Restoration Task Force and conducts research on improving the quality of agricultural runoff and reducing the risk of flooding and on invasive species. The expansion of the range of melaleuca and lygodium are major threats, and ARS is conducting research on biological control of these weeds. ARS scientists and the National Program Staff are working to expand and focus South Florida ecosystem restoration research.
- " The unique ecosystem consisting of Lake Okeechobee and the Florida Everglades is being threatened by increased phosphorus loads draining into the lake. The Subtropical Agricultural Research Station (STARS) in Brooksville is part of a large multidisciplinary team that is investigating the impact of cattle stocking density on ranch productivity, water quality, and biotic indicators of environmental stability.
- " In Fort Lauderdale, the Department of the Interior has appropriated \$6.2 million for a new insect and plant quarantine research facility with the Army Corps of Engineers responsible for construction. ARS will assume ownership once it is completed. Construction delays and design modifications have substantially increased cost. The Department of the Interior has committed \$70,000 of additional funding and the Southwest Florida Water Management District contributed \$400,000 to help alleviate the shortfall in construction funds. ARS has no building and facilities funds for this project, but contributed \$200,000 in program funds for the project. Earliest estimated completion date, assuming funding and construction issues are resolved, is April 2004.
- " In Miami, construction on a new laboratory and office facility was awarded in FY 2004. Ground breaking was on December 16, 2004. The building will support 11 scientists (including two from APHIS). Other buildings are being renovated and the infrastructure at the location is being upgraded.
- " Fire ants, accidentally introduced into the United States from South America, have become a major problem infesting over 321 million acres in 13 states throughout the Southeast causing damage exceeding \$6.5 billion (\$740 million in Florida) per year.

ARS is developing multiple control strategies for fire ants and has released several biological control agents. Two species of parasitic phorid fly and a fire ant pathogen have become established in ten states with resulting reduction in fire ant population densities. In FY 2002, ARS-CMAVE implemented a five-year Areawide Program in 5 states - Florida, Texas, Oklahoma, Mississippi, and South Carolina for the control of fire ants, which is being coordinated by scientists at Gainesville. The program is in cooperation with APHIS and several state universities and agricultural experiment stations including the University of Florida. Demonstration sites have been established in each of the states. A chemical bait has been applied to reduce the initial number of fire ants and the biological control agents have been introduced to these sites. Initial results show a significant decline in fire ant populations and establishment of biological control agents in most demonstration sites. In 2001, a cooperative project between the ARS, APHIS, and the State of Florida, Department of Agriculture & Consumer Services, Division of Plant Industry began mass production of the phorid fly parasite of fire ants, and are now producing more than 3,000 phorids per day. Also, these flies and the fire ant pathogen have been released at several state parks and schools in Florida.

" Mosquitoes continue to be a major public health concern, economic liability, and nuisance in Florida. The Mosquito and Fly Research Unit at Gainesville is a world leader in the development of traps and techniques needed for improving the quality of surveillance and control. This Unit has taken a leading role for surveillance of West Nile virus mosquito vectors in cooperation with the Connecticut Agricultural Experiment Station as directed by Congress.

**HOT ISSUE PAPER FOR SECRETARY VENEMAN'S TRAVEL TO
THE NATIONAL CATTLEMEN'S BEEF ASSOCIATION NATIONAL
CONVENTION IN PHOENIX, ARIZONA, JANUARY 26, 2004
SUBMITTED BY THE AGRICULTURAL RESEARCH SERVICE**

ISSUE: Bovine Spongiform Encephalopathy (BSE or Mad Cow Disease)

The Agricultural Research Service (ARS) conducts research on transmissible spongiform encephalopathies including BSE of cattle, scrapie of sheep and chronic wasting disease (CWD) of deer and elk. The research objectives are to support the feed ban by developing methods to detect feed contamination by ruminant proteins and prions, to determine if TSE's cross species such as CWD into cattle and to develop sensitive detection technologies for prions.

ARS is supporting APHIS as they act on the recent BSE case in Washington State by conducting additional diagnostics, and by gene sequencing to verify the species and origin of the sample from the BSE case.

Several ARS scientists attend the NCBA meeting. ARS scientists that conduct TSE research will meet Thursday January 29 to share current research information and to develop additional research plans. These scientists will meet with the NCBA committees on Friday to provide information from ARS research programs.

The NCBA will have a major forum on BSE on Thursday.

Caird Rexroad, acting associate administrator, will attend the meeting on Friday and Saturday. The National Program Leader for Animal Health, Cyril Gay, will attend the meeting.

ISSUE: ARS Facilities

Congress has directed ARS to plan for moving the U.S. Water Conservation Laboratory and the Western Cotton Research Laboratory from Phoenix to Maricopa, Arizona to a new facility called the "U.S. Arid-Land Agricultural Research Center." The current plans call for a 97,932 square foot facility to support 30 scientists. A groundbreaking for this facility will be held February 20, 2004. The centralization of ARS research facilities in the Maricopa area will advance agricultural research nationally and internationally targeted toward arid and semi-arid lands.

PROFILE OF ARS RESEARCH PROGRAMS IN ARIZONA:

Phoenix -- 105 full-time employees, 30 scientists, \$8.9 million budget.

U.S. Water Conservation Laboratory - Research Leader: Albert J. Clemmens,

Phone: 602-437-1702, e-mail: bclemmens@uswcl@ars.ag.gov

Western Cotton Research Laboratory - Research Leader: Thomas Henneberry,

Phone: 602-437-0121, e-mail, thenneberry@wcr.lars.usda.gov

Tucson -- 47 full-time employees, 12 scientists, \$3.6 million budget

Honey Bee Research Laboratory - Research Leader: Gloria D Degrandi-Hoffman,

Phone-520-670-6380, e-mail: ghoffman@tucson.ars.ag.gov

Southwest Watershed Research Laboratory - Research Leader: Mary S. Moran,

Phone-520-670-6381, e-mail: smoran@tucson.ars.ag.gov

FUNDING:

Proposed Program Increases (Net to Location) - FY 2004:

Phoenix --

\$247,500 Managing Ag Systems for Mitigating & Adapting to Global Climate Change

\$540,000 Biotechnology Risk Assessment

\$315,000 Control of Invasive Species

Proposed Program Decreases (Net to Location) - FY 2004:

Phoenix

\$446,091 Aflatoxin in Cotton

Tucson

\$288,087 Quantify Basin Water Budget Components in the Southwest

To enhance cooperative research efforts, ARS provided FY 2003 extramural funding of:

\$25,000 Arizona State University

\$207,200 University of Arizona

CONTACT: J. Spence, ARS-National Program Staff, 301-504-7050

ARS:NPS:BMcAuliffe:301-504-4574:1/23/04:h:\scribes\brief04\Arizona-bp-01.doc
1/23/04-004

**AGRICULTURAL RESEARCH SERVICE BRIEFING PAPER FOR
DR. KNIPLING'S MEETING WITH THE NORTHWEST CENTER FOR SMALL
FRUIT RESEARCH – March 3, 2004**

ISSUE: Northwest Center for Small Fruit Research, Corvallis, Oregon

The Northwest Center for Small Fruits Research (Center), established in 1990, is a consortium consisting of Idaho, Washington, and Oregon Agricultural Experiment Stations; the Agricultural Research Service (ARS); and Oregon, Washington, and Idaho grape and berry industries. The Center provides a forum for Pacific Northwest small fruits producers, processors, and wineries to share problems, determine priorities, and direct federal grant dollars into research to augment state-funded programs.

The Center and its affiliates have been successful in working with Congress to secure a series of congressional appropriations directed towards building small fruits research programs in the Pacific Northwest. A portion of these funds was used in 1994 to build an addition to the existing ARS building in Corvallis housing the *Horticultural Crops Research Unit*. The building addition now houses research programs in genetics, pathology, and insect pests of small fruits crops, as well as the Center's administration and primary research facility. The Center administers a peer-reviewed funding program that supports research on small fruits crops in a joint research program that includes Oregon State University, Washington State University, University of Idaho, and ARS. From 1991-2003, over \$4.8 million in small fruits research grants and six new ARS scientist positions have been funded by Congress. The Center's FY 2005 funding request to Congress is attached to this paper.

BACKGROUND:

Small fruit crops – blueberries, blackberries, red and black raspberries, grapes, cranberries, and strawberries – are important to U.S. agriculture. According to the USDA-National Agricultural Statistics Service, the estimated value of small fruit production for 2001 was \$4.5 billion, more than the combined value (\$2.7 billion) of apples, pears, peaches, and sweet cherries. The Northwest is a major producer of small fruit crops, and there are thousands of growers producing small fruit crops, dozens of processing/packing companies, and over 400 wineries in the region. The farm value of Northwest small fruit crops represents about 50 percent of U.S. production, excluding the value of California grape and strawberry production. Combined small fruit acreage for the three states is about 92,000 acres.

The Northwest has a unique climate for the production of high-quality small fruit crops. This is primarily because of long growing seasons that are characterized by cool nights, long sunny warm days, and mild winters. The region has a national and international reputation for fruit quality, due to the excellent flavor, color, and nutritional value of fruit grown in this climate. The chemicals that contribute to color are the same ones that provide the powerful antioxidants touted by the medical community as important for human health. The Northwest has the available land, water, labor, and capital needed to

meet the demands of domestic and foreign markets for its small fruit products. The opportunity for exports, particularly for the Pacific Rim countries, is expanding rapidly. The 24,000-acre increase in small fruit production during the past 15 years is a testament to the industry's success in meeting these market opportunities.

Major industry concerns include the need for new varieties and improved pest management strategies. The Center was established to enhance profitability and sustainability of the small fruits industry in the Pacific Northwest through research in genetics, pest management, berry and grape processing, production/physiology, and wine, and through technology transfer. The paramount goal of the Center is the development of research programs to define and enhance berry and grape product quality related to marketability.

ARS RESEARCH:

The ARS *Horticultural Crops Research Unit* (14 scientists) addresses the research needs of small fruits industries in Oregon, Washington, and Idaho. Multiple projects address many aspects of foliage and fruit diseases of several small fruit crops and are funded by ARS through the Center. ARS provided \$246,910 (gross) in FY 2003 for cooperative research on high-priority small fruits research. In addition, the Unit also conducts research on diseases, pests, improved production practices, and application of beneficial microorganisms to improve the growth and health of nursery crops, another major commodity produced by Oregon, Washington, and Idaho.

Also in Corvallis is the *National Clonal Germplasm Repository*, which holds much of the Nation's small fruit crop and wild relative germplasm collections as part of the National Plant Germplasm System. Funding for horticultural germplasm evaluation is available each year through the National Program Staff. The Small Fruit Crop Germplasm Committee competes for funding in that program and is usually funded for at least one project each year.

NCSFR Plant Improvement Initiative

Funded at \$223,673 (gross) in FY2004, the NCSFR will be approaching Congress for full funding (\$1.4 million) of the Plant Improvement Initiative in 2005. The purpose of this initiative is to use targeted appropriations to build and support new and/or existing infrastructure to support the plant breeding and plant evaluation activities vital to these industries. This will, in effect, target appropriations sought by partners to support specific long-term research that is better aligned with the ARS mission, as compared to more ARS funding allocated for competitively-awarded SCA-type activities, through the NCSFR proposal review process.

Sudden Oak Death

Sudden Oak Death (SOD) is a highly virulent disease attacking and killing oaks and threatening small fruit and nursery industries in Oregon and California. ARS has an on-going program of research to determine the host range of the pathogen infecting *Vaccinium* species. SOD is hosted by certain *Vaccinium* species, so the blueberry and

cranberry industries are concerned that their plants could possibly be carriers of a serious and growing national problem.

The berry industries – along with the nursery industry, since azaleas and rhododendrons are numbered among the hosts as well – are anxious for more research on the disease. ARS is hiring a new scientist at Corvallis to deal with SOD epidemiology. This position is being funded by the Floral and Nursery Crop Research Initiative as well as by the NCSFR.

New Blackberry Varieties

ARS Geneticist Chad E. Finn led the cultivar development research in Corvallis that developed five recently released blackberry cultivars – two for the fresh market and three for processing. The fresh market cultivars ripen very early, are firm, and have excellent flavor. The processing cultivars have no thorns, an essential characteristic for berries that will be machine-harvested and processed. In addition, the fruit quality of these cultivars is excellent when the fruit are processed, typically by freezing.

FUNDING:

Small Fruits – FY 2003: \$ 5,440,000

CONTACT: Scott Cameron, ARS-NPS, 301-504-5912

1 ENCLOSURE

ARS:NPS:DEverhart: 301-504-4568:02/20/04:h:\scribes\brief04\Small Fruit bp-02.doc
01/30/04-014

Appendix 7: List of High Profile Topics* Revised July 2003

**Manuscripts and abstracts dealing with these topics will be forwarded to the Area Office and then to the National Program Staff through ARIS to keep management aware of new research results*

1. Creation of transgenic agricultural organisms by genetic engineering.
2. Biotechnology risk assessment research (gene flow, unintended ecological effects) that is likely to affect policy and/or regulatory actions.
3. Cloning of animals by somatic cell nuclear transfer.
4. Somatic cell fusion to recombine DNA in ways that cannot be achieved through sexual crossing.
5. Dioxin research.
6. Intellectual property rights and patent policy of agricultural organisms.
7. Agricultural (crop and animal) practices that may increase emissions of greenhouse gases (i.e., carbon dioxide, methane, nitrous oxide); impacts of global change on human health.
8. Agricultural (crop and animal) practices that threatens human health and the environment through introduction of hazardous materials, including excess nutrients, pesticides, salts, trace elements, pathogens, and pharmaceutically active compounds into soils and water.
9. Agricultural (crop and animal) practices that threatens human health and the environment through introduction of particulates, ammonia, hydrogen sulfide, volatile organic compounds, methane, nitrous oxides and pathogens into air.
10. Boll weevil eradication program.
11. Policies related to international plant, animal, and microbial genetic resources.
12. Research findings and recommendations that are contrary to current dietary guidelines or may be used in food labeling.
13. Megadoses of nutrients that may be beneficial to human health/nutrition.
14. Radiolytic products in food.

15. Harmful microorganisms and their products (e.g., aflatoxin, mycotoxin, fumonisin, Salmonella, E. Coli) in agricultural commodities.
16. Pesticides or animal drugs in foods above approved tolerance levels.
17. All transmissible encephalopathy (TSE) research including BSE research.
18. Development of herbicide-resistant plants.
19. Animal well-being/animal use.
20. Biological items that may affect trade and export negotiations, e.g., fire blight in apples, TCK smut, karnal bunt, insect infestations in export products, etc.
21. Narcotic plant control.
22. Methyl bromide topics that relate to policy and/or regulatory actions.
23. Medfly/Malathion replacements.
24. Research studying antibiotic/antimicrobial resistance.
25. Bioterrorism/attacks on agriculture.
26. Glassy-winged sharpshooter/Pierce's disease.
27. Sudden Oak Death.
28. Asian Citrus Canker.
29. Anthrax.
30. Emerging diseases or pest research that may impact policy and/or regulatory actions.
31. Ralstonia bacterial brown rot.
32. Soybean rust.
33. West Nile Virus.

Appendix 8: Pertinent Federal Laws

Congress has passed many laws to safeguard our Nation's food supply and enable agricultural research. The evolution and enactment of these statutes can be reviewed at <http://www.ars.usda.gov/is/timeline/leg.htm>

Many of our national programs support Federal regulatory and action agencies and some of these agencies are important research partners. The following provides Internet links to some of these agencies as well as pertinent Federal laws.

Animal and Plant Health Inspection Service (APHIS)
Centers for Disease Control and Prevention (CDC)
Cooperative State, Research, Education, and Extension Service (CSREES)
Environmental Protection Agency (EPA)
Food and Drug Administration (FDA)
Food Safety and Inspection Service (FSIS)
Foreign Agricultural Service (FAS)
Forest Service (FS)
National Institute of Allergy and Infectious Disease (NIAID)
National Institute of General Medical Sciences (NIGMS)
National Science Foundation (NSF)
Office of Science and Technology Policy (OSTP)
U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)

Animal and Plant Health Inspection Service (APHIS)

<http://www.aphis.usda.gov/>

Virus-Serum-Toxin-Act: <http://www.aphis.usda.gov/vs/cvb/vsta.htm>

Under this law it is unlawful to prepare, sell, barter, exchange, or ship any worthless, contaminated, dangerous, or harmful virus, serum, toxin, or analogous product intended for use in the treatment of domestic animals.

Lacey Act: <http://www.xmission.com/~gastown/herpmed/lacey.htm>

Under this law, it is unlawful to import, export, sell, acquire, or purchase fish, wildlife or plants taken, possessed, transported, or sold: 1) in violation of U.S. or Indian law, or 2) in interstate or foreign commerce involving any fish, wildlife, or plants taken, possessed or sold in violation of State or foreign law.

Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov/>

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

<http://www.reeusda.gov/>

Environmental Protection Agency (EPA)

<http://www.epa.gov/>

National Environmental Policy Act: <http://ceq.eh.doe.gov/nepa/regs/nepa/nepaeqia.htm>

An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.

Food and Drug Administration (FDA)

<http://www.fda.gov/>

Food Safety and Inspection Service (FSIS)

<http://www.fsis.usda.gov/>

Foreign Agricultural Service (FAS)

<http://www.fas.usda.gov/>

Forest Service

<http://www.fs.fed.us/>

National Institute of Allergy and Infectious Diseases

<http://www.niaid.nih.gov/default.htm>

National Institute of General Medical Sciences (NIGMS)

<http://www.nigms.nih.gov/>

National Science Foundation (NSF)

<http://www.nsf.gov/>

Office of Science and Technology Policy (OSTP)

<http://ostp.gov/index.html>

**The U.S. Army Medical Research Institute of Infectious Diseases
(USAMRIID)**

<http://www.usamriid.army.mil/>

Appendix 9: Position Descriptions

ARS uses a category system for designating groups of positions that have generally similar characteristics, primarily for personnel and budgetary tracking purposes. Category has no legal or administrative significance outside of ARS. Some positions may perform duties from more than one category. ARS categories established for all positions are as follows:

- **Category 1 (Research Scientist).** Permanent positions in which the highest level of work, for a major portion of time, involves personal conduct or conduct and leadership of theoretical and experimental investigations primarily of a basic or applied nature such as: determining the nature, magnitude, and interrelationships of physical, biological, and psychological phenomena and processes; creating or developing principles, criteria, methods, and a body of knowledge generally applicable for use by others. Such positions meet all or most of the criteria enumerated in the Research Grade Evaluation Guide (RGEG.) Category 1 positions are SY positions.
- **Category 2 (Nonpermanent Research/Service Scientist).** Professional scientific positions that are established on a nonpermanent basis, are filled through temporary or term appointments, and entail research and/or service science work. Examples are Research Associate, Research Affiliate, Visiting Scientist, and individuals reemployed in ARS after having retired from Category 1 or Category 4 positions. (*Except those appointed as Collaborators -- see Code 0.*)
- **Category 3 (Support Scientist).** Professional scientist positions which function to provide direct support or service to one or more Category 1 or 4 positions. The work of such positions is characterized by responsible involvement in one or more, but not all, phases of research (particularly not the problem selection and definition phases); responsible participation in analysis and preliminary interpretation of data (but not including responsibility for final interpretation and conclusion which relate the results to the field of research involved). Examples include but are not limited to: (1) conducting literature searches; (2) selecting procedures and conducting experiments; (3) collecting and analyzing data or specimens; or (4) preparing technical reports.
- **Category 4 (Service Scientist).** Permanent positions whose incumbents either primarily or exclusively serve as project or program leaders over or personally perform, work assigned to ARS involving professional scientific services to the public or other governmental agencies, such as: identification of animals, plants, or insects; diagnosis of diseases; mass production of plants, animals, or insects, collection, introduction, and maintenance of germplasm or specimens; vaccine production; education, extension, or technology transfer activities; or nutrient data and food intake surveys. Category 4 positions are SY positions.

- **Category 5 (Technician/Aid/Assistant (Non-engineering and Non-scientific)).** Includes all technicians, aids, and assistants in non-engineering and non-scientific single-interval occupational series (except those within the GS-0300 Group). Examples include: Safety Technician, Personnel Assistant, Accounting Technician, Purchasing Agent, Procurement Assistant, Library Technician, Supply Clerk, Personnel Clerk, Photographer, Guard, Firefighter.
- **Category 6 (Specialist).** “Specialist” positions that perform scientific program management, administration and/or analytical duties and therefore require professional education and training. Examples are: Area Director, Center Director, Agricultural Administrator, National Program Leader, Human Resources Specialist, Information Technology Specialist, Administrative Officer, Budget Officer, and Librarian.
- **Category 7 (Technician/Aid/Assistant positions (Engineering and Scientific Support)).** Identify technician, aid, and assistant positions in one-grade interval series within the GS-400, 600, 700, 800, 1300, and/or 1500 groups. Examples include: Biological Science Technician/Aid, Electronics Technician, Hydrologic Technician, Statistical Assistant/Clerk, Physical Science Technician.
- **Category 8 (Trade and Craft Occupations).** Positions having trade or craft knowledge as the paramount qualifications requirement. Examples: Boiler Plant Operator Foreman, Animal Caretaker Leader, Laborer, Farmer, Tractor Operator.
- **Category 9 (Administrative Support Occupations (Clerical/Secretarial/Other)).** General occupations involved in structured work in support of office operations within one-grade interval series in the GS-300 occupational group. Examples: Secretary, Office Automation Clerk/Assistant, Computer Operator, Administrative Technician/Clerk, Management Assistant/Clerk.
- **Category 0 (Zero).** Includes all positions that do not fit any of the above codes, including all positions incumbered by students. Examples: Student Trainees (STEP, SCEP); Expert and Consultant positions; Collaborators; and Volunteers.
- **Category G (Intergovernmental Personnel Act (IPA)).** Employees serving a temporary assignment between ARS and States, local governments, institutions of higher education, Indian Tribal governments, or other organizations under Title IV of the Intergovernmental Personnel Act of 1978 (PL 95-454).

Appendix 10: Performance Standards

Performance standards identify NPL roles and responsibilities and the criteria for assessing achievements in a fiscal year. There are 6 performance elements: 5 are critical and 1 is non-critical.

Element 1. PROGRAM PLANNING AND PRIORITY SETTING CRITICAL ELEMENT - Weight 2

Identifies, develops, and prioritizes specific national issues/problems, research objectives, and resource needs for use in systematic and strategic planning and guidance of ARS research projects. Plans and conducts National Program (NP) Workshops and multi-location organization planning sessions as needed. Develops NP Action Plans in a timely manner. Provides input to the ARS National Program structure and the ARS 5-Year Strategic Plan as requested.

Fully Successful Level

Demonstrates initiative, creativity, and leadership in developing and prioritizing national problems and objectives to guide ARS research programs. Objectives are developed in accordance with the research priorities of USDA action and regulatory agencies, national trade groups, consumer groups, Congress, the Secretary of Agriculture, and the ARS 5-Year Strategic Plan.

Provides leadership and works effectively as a team member, maintains active communication, and directly interacts with ARS management, other NPS staff, action and regulatory agencies, national trade and consumer groups, Congress, and the Secretary of Agriculture in determining their priorities, problems, and needs to assure they are reflected in ARS research projects.

Plans and conducts NP Workshops and other workshops as needed and develops comprehensive NP Action Plans in accordance with established time frames. Planning sessions and Workshops involve a wide cross section of customers and stakeholders, where appropriate.

Working collegially with the National Program Team, provides ongoing programmatic direction to Research Leaders, Lead Scientists, and Category 1 Scientists, especially in preparation for OSQR review. Provides timely input on prospectus and project plans. Ensures the relevance of the work to our customers and stakeholders, confirms that the work is coordinated and complementary among projects conducting related research, and ensures the approval of documents required by OSQR are completed in a timely manner.

Actively participates in updating the ARS National Programs by providing timely updates, clearly reflecting changing national issues, problems, program objectives, and/or emerging technologies. Continually uses the ARS National Program structure and the 5-

Year Strategic Plan as the guides in program planning activities. Provides support as required to assist the agency in developing the Annual Performance Plan and the Annual Performance Report to meet the requirements of GPRA, and other accountability measures.

Specific Requirements or Goals for Rating Period

Element 2. IMPLEMENTATION PLANNING
CRITICAL ELEMENT - Weight 2

Implements programmatic objectives by ensuring that research projects are focused on achieving the specific goals of each National Program. Directs research project development, including problem orientation, research objectives, funding, and SY allocations. Plans implementation workshops and other means of ensuring proper direction of research. Reviews and approves proposed research activities and reviews ARMP documents for conformity with the objectives. Redirects resources among research projects consistent with National Program priorities and rate of progress made by the scientists on a given project.

Fully Successful Level

Provides leadership and works effectively as a team member to make appropriate recommendations for allocation of personnel and funds to research projects to solve specific national problems. Demonstrates initiative and creativity in redirecting resources among research projects consistent with National Program priorities and rate of progress made by scientists on specific programs and to meet high priority research needs. Ensures that research projects are focused on specific national problems and that the objective and approach statements are relevant to a solution of the problem with an acceptable probability of success.

Provides effective implementation leadership through workshops and other meetings as necessary. Recognizes, defines, and communicates problems in a creative, positive, and constructive manner. For new research initiatives, identifies sources of resource support from completed or lower priority projects. Demonstrates leadership for SY staffing prior to recruitment, disciplinary action, selection, and program orientation.

Working collegially with the National Program Team, ensures that research conducted in the field is consistent with the project plan.

Specific Requirements or Goals for Rating Period

Element 3. PROGRAM REVIEW AND EVALUATION
CRITICAL ELEMENT - Weight 2

Ensures National Program evaluations address the relevance, direction, and rate of progress toward providing solutions to specific high priority national problems and

research objectives. Provides documentation of their review activities and develops recommendations to line managers for strengthening the Agency's research program.

Fully Successful Level

Works effectively with the National Program Team to identify National Programs and projects which need to be reviewed and evaluated, and participates in planning and conducting these reviews. Prepares timely written reports containing executive summaries for ARS management indicating relevance in relation to the scientific and technological objectives and rate of progress and major accomplishments of the National Programs and projects in providing solutions to specific high priority national problems and research objectives. Identifies action items with target dates and responsible individuals as appropriate. Addresses new needs that have emerged, where appropriate. Makes recommendations, either individually or as a National Program team member, for implementing program changes or redeployment of resources when necessary.

Specific Requirements or Goals for Rating Period

Element 4. PROGRAM COORDINATION AND COMMUNICATION

CRITICAL ELEMENT - Weight 2

Provides timely assessment of research breakthroughs/developments and new research opportunities and communicates such developments and assessments to ARS managers and scientists. Provides technical and scientific support to ARS scientists and management to ensure proper coordination among projects. Keeps team members well informed of progress on research as well as goals, objectives, priorities, and activities associated with the National Program. Facilitates the communication of research results and technology developments to the Administrator, Department, action and regulatory agencies, cooperators, user groups, Congress, and the general public by responding to inquiries, developing briefing papers, and other means as necessary. Demonstrates awareness and support of EEO/CR regulations and principles.

Fully Successful Level

Through personal action, demonstrates support of equal employment opportunity principles in all interactions with employees which may include either direct or indirect involvement with recruitment, interviewing, selection, training, performance evaluation, promotion, travel, awards, adverse action, and work assignments. Maintains an atmosphere of equal treatment in the work place by discouraging discrimination of all forms. Maintains an awareness of key personnel regulations and adhere to these regulations.

Assesses breakthroughs and new opportunities, and makes contacts and maintains interaction on a timely basis with ARS managers and scientists, and with other agencies, as appropriate. Consistently demonstrates fairness, cooperation, and respect in dealing with all internal and external customers and in a manner which demonstrates an awareness of, and compliance with, civil rights policies and responsibilities.

Maintains appropriate contact and interaction with customers, partners, and stakeholders. Ensures timely program coordination with Federal action and regulatory agencies, and with SAES's and Universities, including the 1890 and 1994 Institutions when appropriate.

Provides leadership, maintains active communication, and directly interacts with ARS management, other NPS staff, action and regulatory agencies, national trade and consumer groups, Congress, and the Secretary of Agriculture in determining their priorities, problems, and needs to assure they are reflected in ARS research projects.

Provides leadership through workshops and other meetings to assure coordination among projects and with cooperators.

Provides timely communication of research progress and impact to the Department, Congress, user groups, consumers and the general public through the ARS Information Staff and other appropriate channels.

Maintains active communications, shares responsibility, and directly interacts with ARS management in reviewing and approving proposed/revised CWU's, reviewing ARMP documents, filling SY vacancies, reviewing and selecting Research Associate Proposals, placement of existing SY's and concurring with area management on selection of Research Leaders.

Specific Requirements or Goals for Rating Period

Element 5. TEAMWORK CRITICAL ELEMENT - Weight 2

Leads or co-leads at least one National Program Team and serves as a member on others. Demonstrates strong personal commitment, responsibility, initiative, and interpersonal skills to assure the success of each program. A successful team leader and/or member is productive, cooperative, effective, and creative.

Fully Successful Level

For this element to be rated Fully Successful the NPL normally:

Finishes assigned teamwork on time, meets deadlines, and advances team goals by accepting responsibility to deliver products. Keeps up with the day-to-day work of the team; carries a "fair share" of the workload. (Accepts additional or undesirable work assignments as needed.) Participates constructively in team meetings. Identifies individual training needed to perform well as a team member and completes the training.

Communicates effectively in team meetings by being a good listener as well as source of creative ideas. Shows respect toward all team members.

Promotes good will and facilitates teamwork among all levels of staff by managing and resolving conflicts, confrontations, and disagreements in a positive and constructive manner. Negotiates positively to reach consensus on goals and products and faithfully implements the agreed-upon decisions. Is an effective spokesperson for the team and program. Demonstrates a clear understanding of program goals and components, a commitment to increasing personal knowledge and understanding of the program, and a desire to help other team members in his/her area of expertise.

Specific Requirements or Goals for Rating Period

Brings others together to work as a group to accomplish goals. Encourages and facilitates pride, and risk-taking. Shows flexibility by adapting to changes in direction and priorities. Supports the outcome of a decision made by team consensus after all have contributed. Treats differences as strengths to build a solid consensus.

Element 6. SPECIAL STAFF ASSIGNMENTS

NON-CRITICAL ELEMENT - Weight 1

Performs special assignments such as participation on special teams, committees, and task forces; prepares special reports and position papers. Provides support to other National Program teams that need his/her expertise intermittently.

Fully Successful Level

Accepts and successfully completes special assignments in a timely manner. Analyses are thorough and accurate. Willingly provides support to National Program Teams, on which he/she does not serve, as needed.

Specific Requirements or Goals for Rating Period

Appendix 11: Performance Documentation

FY-.... Performance Documentation - Name

Element 1. Program Planning and Priority Setting

- Developed a 10-year cost/capability assessment of the research needed to support technology requirements for implementation of Concentrated Animal Feeding Operation (CAFO) regulations. The document assesses current ARS research capabilities, identifies research needs and projects budget increases required to address the research needs. This document will help target ARS research to meet NRCS needs and will contribute to a general assessment of CAFO regulations by USDA and EPA.
- Led the development of research cooperation between ARS and Brazil (EMBRAPA) in the area of animal waste management. Traveled to Brazil to identify research problems of mutual interest; organized a tour by Brazilian scientists of ARS locations conducting animal waste research; contributed to the development of a proposal for cooperation in this area; and encouraged ARS scientists to submit grant proposals to support the cooperation. The project has been funded by EMBRAPA; joint research projects will be established in Brazil and the US; exchange of students and visiting scientists will occur; resources of ARS and EMBRAPA will be leveraged; and improved management practices and treatment technologies will be developed more quickly by testing/refining them in multiple settings.

Element 2. Implementation Planning

- Used funds (\$3.5 m) from the Agricultural Risk Protection Act of 2000 to enhance ARS/university research cooperation in the area of animal waste management. Two major cooperative investigations are in progress: (1) ARS and university scientists in Texas and New Mexico are working through the Consortium for Cattle Feeding and Environmental Sciences to study the effect of diet on animal productivity, manure production, manure characteristics, ammonia emissions and runoff quality from beef cattle feedyards. (2) Scientists from the University of Illinois and ARS labs in Illinois and Iowa are developing practices for effective use of swine waste in crop production systems. These efforts leverage human and financial resources while leading to the development of practices to use animal waste as a valuable resource while protecting the environment.
- Organized, in cooperation with Mike Jawson, National Program 206 research progress and planning workshops that will be held in 2002 in the areas of emissions, animal waste treatment technologies, and pathogens. At these workshops ARS scientists and NPS will discuss research progress and direction, gaps and emerging research opportunities, and opportunities for expanded cooperation. These workshops will allow us to make mid-

course corrections and improvements in the 206 National Program and will help us focus on the program assessment phase of the National Program cycle.

Element 3. Program Review and Evaluation

- Reorganized and redirected, in cooperation with Mike Jawson, [CRIS](#) projects in National Program 206 through the ad hoc review process to increase their focus and relevance. Three related but poorly coordinated CRIS projects at Mississippi State, Mississippi were combined into a single project; the CRIS project at Auburn, Alabama was redirected to make the research more relevant to the problems of the region; and the CRIS project at Lincoln was expanded to reflect new research opportunities. These changes improved cooperation within a lab and provided new opportunities for cooperation with other ARS units.

- The first bullet under Element 1 and the first bullet under Element 5 also contribute to Program Review and Evaluation.

Element 4. Program Coordination and Communication

- Worked with customer groups and ARS scientists to identify the research that would be needed to help customers address the problems/issues they face. Listened to customer group problems; gave advice about approaches to address the problems through research; and offered suggestions relative to the briefing documents prepared by customer groups for interested parties. These efforts contributed to a total funding increase of approximately \$2.8 m across seven ARS locations in FY 2002.

- Contributed to the continued development of the National Phosphorus Program; a cooperative effort by ARS, CSREES, NRCS and EPA; to develop management practices and decision tools to prevent contamination of surface waters by phosphorus from manure and fertilizers. Activities have included encouraging ARS scientists to participate, offering suggestions for program direction and increased visibility, and helping set up meetings to enhance interagency cooperation and focus the research. These activities have increased participation in the program; and contributed to the development of a homepage for the program, a special session at the American Society of Agronomy annual meeting, joint grant proposal development by ARS and university scientists, and popular press publications describing the program.

Element 5. Teamwork

- Worked with ARS and CSREES National Program Leaders to develop a position paper to illustrate cooperation and research direction relative to Goal 5: Ensure Environmental Quality of the Food Animal Integrated Research 2002 (FAIR 2002) Initiative. Wrote the document distributed at the Stakeholder Workshop for Animal Agriculture, gave an oral presentation on the subject, and prepared a poster demonstrating ARS/CSREES research cooperation in this area. These activities should contribute to customer/stakeholder efforts to double ARS/CSREES research funding in this area over the next five years.

- Presented lessons learned in the peer review of National Program 206 and National Program 202 to scientists preparing for peer review in National Program 205 and

National Program 307 . These presentations at National Program Planning Workshops provided scientists background perspective about the review process and provided information to develop better Project Plans.

Element 6. Special Staff Assignments

- Served as the ARS representative on the committee that organized and conducted a major international conference, the Second International Nitrogen Conference, that examined the current state of knowledge relative to the role of nitrogen in food production, energy production, and environmental quality. Organized and chaired sessions on the role of nitrogen in agriculture, organized ARS input to position papers developed at the conference, and secured a prominent position for ARS in the Plenary Session of the Conference. Widely circulated documents and position papers from the Conference will reflect ARS thinking on nitrogen management.

Definitions, Abbreviations, and Acronyms

| | |
|---|--|
| AC | Administrator's Council [See Office of the Administrator (OA)] |
| AD | Area Director, line management (See ARS) |
| AD-421 | Research Project Report. Completed by Lead Scientist on an annual basis for each research project. |
| ADA | Associate Deputy Administrator, NPS |
| AFM | Administrative and Financial Management. This branch of ARS manages support activities, such as procurement, facilities, fiscal allocations, and personnel operations at all levels in ARS. |
| APHIS | Animal and Plant Health Inspection Service |
| AO | Area Office: Consisting of the Area Director, an Associate Director, and Assistant Director. The Area Office is responsible for implementing the research identified by NPS |
| ARIS | Agricultural Research Information System |
| ARMP | Annual Resource Management Plan |
| ARS | Agricultural Research Service is an agency in the Research, Education, and Economics (REE) mission area of the USDA. ARS has about 8,000 employees, including 2,200 senior scientists. The Agency conducts research at over 100 locations in the U.S. The Agency is led by an Administrator and is divided geographically into eight Areas, which are led by Area Directors. |
| BMPS | Budget and Program Management Staff |
| CD | Center Director: Line management (See Center/Institute/Laboratory) |
| Center/Institute/ Laboratory | Locations with more than one Research Unit may be called a Laboratory, Institute, or Center and are administered by a Laboratory, Institute, or Center Director. |
| CR | Civil Rights Office, ARS, REE, USDA |
| CSREES | Cooperative State, Research, Education, and Extension Service, REE |
| CRIS | Current Research Information System: This is an electronic system for the filing and retrieval of information about individual agricultural research projects and encompasses more than just ARS. In ARS, the terms "CRIS Work Unit" or the acronym "CRIS" are used synonymously with "research project" or "project ." New projects are planned in coordination with NPS and are subject to external peer-review. The Office of Scientific Quality Review (OSQR), located in Beltsville, MD, coordinates this review. The normal life of a project is five years. |
| DA | Deputy Administrator |
| FDA | Food and Drug Administration |
| FSIS | Food Safety and Inspection Service |
| GPRA | Government Performance and Results Act |

| | |
|-------------|--|
| ID | Institute Director: line management (See Center/Institute/Laboratory) |
| LD | Laboratory Director: line management (See Center/Institute/Laboratory) |
| LS | Lead Scientist: Responsible for implementation of CRIS project |
| MOU | Memorandum of Understanding |
| NAL | National Agricultural Library |
| NPL | National Program Leader: A member of the National Program Staff (NPS) |
| NPS | National Program Staff: Members are called National Program Leaders and each is a subject matter specialist. NPS serves the Administrator of ARS in developing and coordinating research plans and strategies on a national basis. NPS sets National Program directions (relevance), establishes priorities, allocates resources, and acts as a clearing-house for decision-making. Considerable interaction between line management and NPS is required to fulfill respective roles |
| NPT | National Program Team: A crosscutting team composed of National Program Leaders |
| OA | Office of the Administrator: Under the direction of the Administrator and the Associate Administrator, the Operations Staff (OS) and the Administrator's Council (AC) provide a forum for making key decisions at ARS. |
| OIRP | Office of International Research Programs |
| OMB | Office of Management and Budget |
| OSQR | Office of Scientific Quality Review, ARS, REE, USDA. As a result of Public Law 105-185, the Agency established the Office of Scientific Quality Review to coordinate the peer review of all research (CRIS) project proposals in ARS, by a panel of individuals on a five-year cycle. |
| OTT | Office of Technology Transfer |
| PIP | Performance Improvement Plan – Process used when an employee's performance is deficient or lacking. |
| REE | Research, Education, and Economics |
| RU | Research Unit: The basic management unit within ARS. It is in the Research Unit that our business of research is conducted. There is at least one and usually several research projects (CRIS Projects) in each Unit. A Research Leader (RL) leads each Research Unit, both scientifically and administratively. Typically, a Research Unit is comprised of 5-10 research scientists, a scientific and clerical support staff, technicians, post-doctoral employees, and temporary students. |
| RPES | Research Position Evaluation System. |
| RL | Research Leader: See Research Units. |
| SY | Scientist Year: This is the effort of a research scientist for one year. Fractional efforts (e.g., 0.5 SY) may be assigned in a given |

project. It is possible for a scientist to work on more than one project during the course of a fiscal year. The term is also used in ARS as a synonym for a research scientist (e.g., six SYs (research scientists) in the Unit).

USDA

United States Department of Agriculture

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National Program Leader Training Committee

Lynn Booker

Jan Cline

Cyril Gerard Gay (Chair)

Cynthia Hanna

Marilyn Low

Terence Lynch

Nancy Ragsdale

Steven Shafer

Contributors

Sean Adams

Will Blackburn

Jim Bradley

Rick Brenner

Dwayne Buxton

Sherri Caroll

Jerry Crawford

Dan Domingo

Eleanor Frierson

Richard Greene

Jeff Kurtz

Ray Leaman

Joan Lunney

Sandy MillerHays

Linda Mooney

Marcia Moore

Harriet Rector

David Rust

Carol Shelton

Jill Stetka

Marshall Tarkington

Curtis Wilburn