

# 2008 University of Alaska Combined Research and Extension Plan of Work

## Brief Summary about Plan Of Work

### I. Plan Overview

#### INTRODUCTION

The University of Alaska Fairbanks' School of Natural Resources and Agricultural Sciences (SNRAS), Agricultural and Forestry Experiment Station (AFES), and Cooperative Extension Service (Extension) are dedicated to providing research, education and outreach relevant to the sustainable development and use of Alaska's natural resources; developing new economic opportunities; and improving the quality of life in Alaska and the circumpolar north. The School of Natural Resources and Agricultural Sciences, AFES and Extension carry out the land-grant mission for the University of Alaska Fairbanks.

The land-grant system is a partnership between the federal government and the states that establishes a mutual set of obligations. The federal government provides a predictable pool of matching funds to universities that agree to maintain programs of research, instruction, and public service in agriculture and natural resources relevant to that state, the nation, and the world. A special characteristic of land-grant programs is their commitment to develop and apply knowledge important in the real world for the successful long-term management of natural resources to meet both human needs and values. Criteria that we use to set priorities in our work must reflect our commitment to the land-grant mission, as well as a commitment to excellence.

The Agricultural and Forestry Experiment Station is the research arm of SNRAS. It is imbedded within the School and is a part of its research, education, and outreach activities. The School and Experiment Station (SNRAS/AFES) operate major facilities in Fairbanks and Palmer, research sites at Delta Junction, Nome, and Bonanza Creek and manage research projects located throughout Alaska. SNRAS/AFES is organized into four departments: Forest Sciences, Geography, Plant, Animal, and Soil Sciences, and Resources Management. Extension is not a part of SNRAS but is under the administration of the College of Rural and Community Development. Extension operates eight district offices around the state and is organized into four program areas: Agricultural and Horticulture; Natural Resources and Community Development; Home, Health and Family Development, and 4-H Youth Development. AFES and Extension are funded by federal formula funds. All units receive state matching funds, as well as other state appropriations, state and federal grant funds, and private funding. SNRAS/AFES is estimating professional SYs on total formula funds received which includes Hatch, Hatch Multistate and McIntire-Stennis funding sources. Although linkage between the units is not administratively mandated at the University of Alaska Fairbanks, they are linked by federal legislation, joint funding, and this joint Plan of Work.

Alaska is recognized for its immense size and sparse population and its cultural, geographic and environmental diversity. Alaska represents a major region of renewable and non-renewable natural resources in the United States. Its 365 million acres include the nation's largest oil reserves and coal deposits. The state also contains an array of mineral deposits including gold, zinc, boron, and molybdenum. Alaska has a diverse geography that offers soils for production of food and fiber as well as a multitude of recreational and tourism activities. Waters surrounding Alaska's shoreline and riparian habitats contain large stocks of salmon, cod, pollock, halibut and shellfish that support thriving commercial, sport and subsistence fisheries. Alaska's natural resources have historically been the foundation of the state's economy. Thus, the use and management of these resources is a predominant force in the planning and delivery of any teaching, research, extension, and outreach programs. The finite nature of the state's non-renewable resources and local and national controversies surrounding resource extraction and related environmental concerns affect the activities of SNRAS/AFES and Extension. The University of Alaska Fairbanks in general and SNRAS/AFES and Extension in particular, must meet the challenges to fulfill ever increasing demands for research, education and outreach relevant to sustainable management of the development and use of Alaska's resources.

Alaska faces many choices and challenges in the use and development of its resources. In the last three decades of the 20<sup>th</sup> century, Alaska's economy became dependent upon revenues related to petroleum development. To diversify its economy, the state must begin looking toward non-petroleum natural resources for economic opportunities that are cost-effective, sustainable, and beneficial to Alaska. Facing these challenges and taking advantage of opportunities to properly manage resources for the long term requires the application of special in-depth knowledge. The programs of SNRAS/AFES and Extension give Alaska's resource owners and users essential components of this knowledge. Extension will play a vital role in linking the knowledge generated by SNRAS/AFES, the University of Alaska Fairbanks, the University of Alaska and other information sources to meet the needs and interests of Alaskans.

Alaska imports a high percentage of foods and other agricultural products consumed in the state. Growers in the agricultural sector produce products primarily for in-state consumption including fresh market potatoes and vegetables; forages, grains, hay, and manufactured livestock feeds; controlled environment products including bedding plants, and florals; landscape ornamentals; and a variety of "niche market" crops. Livestock enterprises

include dairy, beef, swine, reindeer, and alternative game animals such as muskoxen, elk, and bison. Producers will require increasing information specific to northern latitudes as consumer demand increases due to changing preference and a growing population. Extension will be a critical partner to SNRAS/AFES in providing a two-way linkage between researchers and producers to deliver the latest research findings and educational and outreach opportunities.

### **MISSION STATEMENTS**

The mission of SNRAS/AFES is to “generate and provide knowledge and train students for successful long-term management of natural renewable resources in Alaska and the circumpolar world, and to discover, describe, explain, and interpret the spatial characteristics of the northern regions of the earth.” The School and Experiment Station are committed to assisting and training natural resource managers who make and implement decisions to develop, sustain, or protect natural systems to meet human needs and values.

The mission of Extension is “to interpret and extend relevant research-based knowledge in an understandable and usable form; to encourage the application of this knowledge to solve the problems and meet the challenges that face the people of Alaska; and to bring the concerns of the community back to the university.” Extension is committed to promoting the sustainability and economic security of individuals, families and communities by providing practical, non-formal education services that promote the wise use of natural resources, respect for cultural and ethnic diversity, and being responsive to emerging stakeholder needs and interests.

### **LINKAGES**

There are strong linkages between Extension and SNRAS/AFES to support agriculture, horticulture, forestry, and rural and economic development. The units work cooperatively as well as separately with other units within UAF, the University of Alaska state-wide system, federal and state agencies, non-governmental organizations, private industry; and through multi-state collaborations with other land-grant universities. They collectively and individually generate and disseminate knowledge to stakeholders who include higher education students, individuals, businesses, industry, government, non-governmental organizations and communities throughout Alaska and the circumpolar north and the nation. Extension brings the university to Alaskans and community concerns back to the university.

### **MERIT REVIEW PROCESS**

The SNRAS/AFES uses an established scientific peer review process to review and evaluate narratives that are required to report activities related to the POW. Extension uses the merit review process and will use a general review process for this joint POW.

### **EVALUATION OF MULTISTATE AND JOINT ACTIVITIES**

When state and national research priorities match the SNRAS/AFES programmatic focus and capabilities, then our research programs direct their attention to these topics and seek support or partnerships. Outreach and extension programming carried out by Extension are conducted in response to identified stakeholder needs and interests.

### **STAKEHOLDER INPUT**

Extension jointly sponsors many agricultural and horticultural conferences and outreach activities with SNRAS/AFES where the units share mechanisms to gather formal and informal stakeholder input. Extension also relies on advisory groups as an important stakeholder needs assessment process. Extension has a Statewide Advisory Council and faculty in districts across the state that use local advisory committees to provide them with community input related to local program stakeholder needs and interests. The SNRAS/AFES Board Of Advisors meets at least twice each year (and additional meetings as deemed necessary) with the Dean, Director, Department Heads, and selected faculty and students to assist in establishing priorities and developing program direction for in consultation with appropriate constituencies.

### **STRATEGIC PLANNING PROCESS**

Planned programs define in more specific and concrete terms the different aspects of our mission. Emphasis areas are the natural resource topics, issues, and problem areas that unify and delimit the work of the SNRAS/AFES and Extension. The purpose of defining planned programs is to allow the concentration of resources (money and people) that will promote high-quality work.

Planned programs will be used to provide guidance for faculty and administrators, to help direct new programs and programs currently in place, and to provide a direction for the kind of new or retained faculty expertise needed. The identification of planned programs also represents a decision about topics that will not be emphasized. This POW provides assumptions that justify the adoption of each planned program and provides knowledge areas, specific long and short term goals, and measurements to access success in meeting these goals.

Research planned programs are: High Latitude Agriculture, High Latitude Soils, Ecosystem Management, Natural Resource Use and Allocation and Geographic Information. The five research planned programs for SNRAS and AFES are the five emphasis areas in our Strategic Plan produced by faculty in 2004. The Plan reflects ideas and advice given by SNRAS and AFES client user groups, students, the Board of Advisors for the school and station, panels of expert advisors representing clientele, state and national peers and cooperators, and UAF administration. The Strategic Plan 2004 is used to set priorities for the school or station as will this POW. The partnership with Extension will strengthen the outreach component of AFES to meet the many needs for knowledge about Alaska and circumpolar resources and geography, both as opportunities for expansion present themselves.

Strategic planning within Extension was undertaken to set organization priorities; facilitate the partnership with SNRAS/AFES and to promote linkages with other units in the University of Alaska system. The Agriculture program will enable closer ties between extension programming with research, education and outreach activities in the Plant, Animal, and Soil Science Department in SNRAS/AFES. The recent strategic planning session for the new Natural Resources and Community Development program area resulted in a community-driven problem-solving design based on themes. Once faculty established sustainable solutions in problem areas identified in communities, faculty will shift to a new theme, serving more communities needing faculty expertise to develop those solutions. Natural resource management-related programming is a priority for Extension in Alaska. Rural development is also a critical need. Extension will continue to integrate more of these activities with research, education and outreach in SNRAS/AFES and other units at UAF and in the UA system. The focus will be promoting natural resource-based economic development in rural communities and helping these communities manage their natural resources to their optimum benefit.

Statewide needs assessments used stakeholder input to identify concerns with individual, family and community sustainability.

Extension will use a multidisciplinary approach to programming in food preservation, still in high demand in Alaska due to the high proportion of the population that practices a whole or partial subsistence lifestyle. Stakeholders also desire more programming in financial management, parent education, and healthy lifestyles. Rising energy costs are increasing already strong demand for housing and home energy use programming. Positive youth development programming builds upon a strong 4-H program that in Alaska often focuses on natural resources, agriculture, and workforce development. New urban and underserved populations will benefit from experience working with children of military families to cope with frequent relocations and deployment of parents. Extension's strategic planning officially recognized the importance of programming addressing invasive weeds and noxious plants. Building on prior work and faculty expertise, Extension is taking the lead in crafting Alaska's response to invasive weeds, noxious plants and pest management before they become the problems they are in the 48 contiguous states of the United States.

This Plan of Work will help strengthen the working relationship between SNRAS/AFES and Extension. Strong and growing relationships between SNRAS/AFES and Extension are essential to the success of both units. We share goals and missions in our commitment to excellence in research, education, extension, and outreach. With finite resources, we will achieve more working together than separately.

## **PLANNED PROGRAMS**

### **High Latitude Agriculture**

Since 1975, the Alaskan economy has been dominated by activities related to development and production of oil. Other resources contributing to lesser degrees are fisheries, mining, tourism, timber, and agriculture. As oil production approaches its finite limits, economic diversification is becoming an ever increasing topic of conversation in the legislature and the halls of private sector businesses. Alaska's location relative to the Pacific Rim and Asian markets makes export of agricultural and forest products of significant interest; however, there currently is no infrastructure in place for exporting of Alaska farm products. Currently, Alaska imports a high percentage (at least 90 %) of foods and other agricultural products consumed in the state. Growers in the agricultural sector produce products primarily for in-state consumption and use including fresh market potatoes and vegetables, forages, grains, and other livestock feeds, greenhouse vegetables, flowers, and ornamentals, and a variety of 'niche market' crops and products. Animal enterprises include dairy, beef, swine, reindeer, and alternative game animals such as muskox, elk, and bison.

Alaska expands its in-state consumption and export markets, our producers will require increasing access to research derived information specific for our northern latitude environment as well adoption of knowledge derived from research in other states.

### **High Latitude Soils**

Soils are a fundamental resource, and knowledge about the cold-climate soils of Alaska is crucial for most Alaska resource management, production, and construction activities. Proper knowledge and planning of soil-disturbing activities can prevent major impacts on other resources. AFES operate soil laboratories in Alaska and will remain one of the major sources of information about Alaska soils. Under current Alaska climate variability, cold soils are experiencing significant changes that are in turn causing changes in natural and managed ecosystems.

### **Management of Ecosystems**

Alaskans live in an environment, the circumpolar north, unlike any other in the United States, with unique features such as permafrost, the boreal forest, and continuous summer daylight alternating with sustained winter darkness. Alaska's resources must be properly managed and cared for in order for its people to survive socially and economically, and for the long-term health of its living systems. The soils, forests, tundra, grasslands, and animals of Alaska have long been valued by its people, who have either lived close to these resources for many generations, or who face the need to adapt to a changing environment. Alaska's resources offer many opportunities, but also many natural limitations that must be known and respected if they are to be developed successfully, and in a way that can be sustained over the long term. AFES will play a pivotal role in teaching and providing information about management of Alaskan and northern ecosystems. Management of the boreal and southeast Alaska forests will play an increasing role in fire disturbance and adaptation to climate change. Their understory and tree species will be instrumental in providing market products developed from ethnic botanicals. Recreation opportunities will continue to be attractive for tourists and residents providing business opportunities for Alaskans but also requiring a closer attention to ecosystem management. Communities will increasingly depend on Alaska's natural resources for viable economic development to sustain their communities and promote family well being. Policy to sustain this growth that mirrors sociological and technological change will be critical.

### **Natural Resource Use and Allocation**

Alaska is a state with an urban core and rural periphery. Major resources development activities are centered in the oil and gas industries. These are located in the urban centers where there is access to multi-modal transportation and advanced communication systems. However, urban communities lack infrastructure to engage in value-added activities that would enhance development of non-petroleum industry. Most rural communities are off the road/rail system and communication is still somewhat limited. Rural communities are lacking in even the most basic amenities such as adequate sanitation and efficient energy sources that would attract appropriate resource developers. As a result, these communities depend on resources for subsistence. Research is needed that will afford both urban and rural communities the opportunity to diversify their economies. Additionally, these efforts should provide underserved populations in rural areas real options for economic development and improved quality of life. Research priorities will be determined through joint collaboration with stakeholders in communities, industry, and state and federal agencies. Our Board of Advisors which has two members serving rural communities and Alaska native populations will assist in obtaining input from those that have been underserved in the past.

### **Geographic Information**

Nearly all maps and most data about natural resources are now stored, shared, and analyzed as digital spatial files. Natural resource managers, and increasingly a broad array of stakeholders, need to understand the concepts and practice of creating, analyzing, and displaying spatially referenced natural resource and human community data. SNRAS will be the primary educator in advanced Geographic Information Systems and will continue to provide leadership in the theory and practice of using geo-referenced data.

### **Agriculture and Horticulture**

Agriculture and horticulture are two main areas of information sought by Alaskans through Cooperative Extension Service. Agriculture and horticulture outreach includes the areas of animal agriculture, agronomy, agro-forestry, and horticulture. Areas of service within animal agriculture include production animal agriculture, home animal production, and companion animals. Areas of service in agronomy include cereal grains, forages, and Conservation Reserve Program (CRP) land management. Areas of service in agro-forestry include Christmas tree production, livestock related forestry uses, and other food products produced via forest or woodlot management. Areas of horticulture are divided into two broad areas, commercial horticulture and consumer horticulture. Commercial horticulture includes production of fruits and vegetables for sale off-farm, nursery production of woody and herbaceous ornamentals, greenhouse production of bedding plants, hanging baskets, and potted plants, landscape installation and maintenance services, golf course turf management, commercial lawn maintenance, and sod production. Consumer horticulture includes home and community gardening and landscaping and lawn maintenance by the homeowner.

### **Invasive Weeds, Noxious Plants and Pest Management**

Integrated pest management (IPM) is the primary approach Extension uses to assist its stakeholders when providing pest management information and educational outreach. Extension has operated a collaborative, statewide IPM education program since 1981 providing research-based, practical information to help groups and individuals

understand pests and choose appropriate control options. In addition to public outreach, IPM staff performs critical insect pest sampling and monitoring projects.

### **Youth Development**

One of two major approaches Extension will use to promote positive youth development is education with a focus on skills and knowledge targeting individual learners with the goals of developing competency in various knowledge areas. The content approach to 4-H follow Mission Mandates as set out by CSRESS will create meaning experiences for individuals, institutions, using technology to benefit audiences in venues that they value. The Mission areas are three-fold: Science, Engineering, and Technology – tied to agricultural and environmental issues; Healthy Lifestyles – tied to human health and well-being; and Citizenship – tied to the activities of people within institutions and government for the common good. Programs such as 4-H clubs, school enrichment programs, after school activities, and summer camps will achieve Extension's youth development goals to more areas in Alaska than currently being served. The contextual approach that will underlie 4-H youth development programming focuses on developmental needs targeting opportunities for youth transitioning from childhood to adulthood by meeting needs in positive ways. Context means using circumstances and conditions which surround an event or individual; the circumstances or settings which determine, specify, or clarify the meaning of an event. The goal of Alaska's 4-H program is to support the maturation of youth from childhood to adulthood. Training throughout the state, using the Essential Elements of Youth Development, will be the foundation of all Extension 4-H and youth development programming within this contextual framework that include generosity, belonging, independence, and mastery.

### **Sustainable Individuals, Families, and Communities**

Extension's Sustainable Individuals, Families and Communities Program include five areas:

- 1) Health, Nutrition and Foods includes areas such as food preservation, food safety, food preparation, food product development, Alaska indigenous foods, exercise and fitness, healthy lifestyle choices, nutrition, and diet and nutrition issues.
- 2) Human Development includes areas such as lifespan development, transitions, grief and loss, and caregiver training.
- 3) Consumer Resource Management includes areas such as estate planning, budgeting, transitions, financial management, time management, stress reduction.
- 4) Homes and Energy include areas such as indoor air quality, home maintenance and repair, building science and energy use.
- 5) Emergency Preparedness includes areas such as families and communities responding to natural and manmade disasters.

### **Natural Resource Stewardship**

The Natural Resource and Community Development program will address stakeholders' need for unbiased, science based information about natural resource issues in forestry, mining, water and rural communities. Much of Alaska's natural resource wealth is located in rural areas, but urban populations have an impact on natural resource issues, e.g., forest resources and essential water resources. Many urban Alaskans employment is directly or indirectly linked to natural resources.

## **II. Merit Review Process**

### **1. The Merit Review Process that will be Employed during the 5-Year POW Cycle**

- Internal University Panel
- External University Panel
- Expert Peer Review

### **2. Brief Explanation**

The School of Natural Resources and Agricultural Sciences and the Agricultural and Forestry Experiment Station uses its established scientific peer review process to review and evaluate proposals, publications, and specific annual reports that could include the annual narratives that are required to report activities related to the POW. Extension uses the merit review process and will use a general review process for this joint POW.

## **RESEARCH**

The Agricultural and Forestry Experiment Station complies with sections 3(c)(1) and (2) of the Hatch Act and section 1445 of NARETPA (Hatch Regular Formula Funds) and the amendment to the Hatch Act of 1887 to Section 104 by AREERA for programs funded under section 3(c)(3) of the Hatch Act (Hatch Multistate Research Funds) by using its established scientific review process for all proposals, publications, and specific annual reports that could include annual progress of work accomplished under this POW. All new and revised Hatch (and McIntire-Stennis) project proposals within the Agricultural and Forestry Experiment Station undergo scientific peer review. At present we are

using the process established by NSF and NRI. Previously we had used the Hatch and McIntire-Stennis Administrative Manual's Appendix F "Essentials of a Project Proposal", which is less stringent. All proposals are submitted to the Director of the Agricultural and Forestry Experiment Station. The blind peer review panel is composed of a minimum of three members who are appointed by the Director. The panel consists of competent authorities in the discipline of the proposal/publication/annual report or related disciplines and includes at least one authority in a supporting discipline. Each reviewer completes a Peer Review Form that includes specific criteria, provides for other comments and suggestions, and makes a recommendation to the Director. Reviews are returned to the Director for transmittal to the author(s).

The author(s) review all comments and recommendations of the reviewers and make adjustments or explanations in the document. The Director reviews all comments and recommendations from the reviewers along with the revised proposal/publication/report. The signature of the Director on form AD 416 submitted to CSREES, USDA, will indicate approval of the project by the Director and will certify that the proposal has been recommended for approval by a majority of the members of the Peer Review Panel. Scientific peer review of multi-state research projects are carried out for individual projects under the aegis of the Regional Coordinating and Implementation Committee (RCIC). The specific review process can be found in the Section I.G. "Summary of the Western Review Process" in the Supplementary Manual of Procedures for Western Regional Research. This can be found on-line at <http://www.colostate.edu/Orgs/WAAESD/>. All faculty in SNRAS/AFES who are participants in Hatch multi-state projects are required to have an approved Hatch General project that is related to the field of study of the Hatch multi-state project in which they are a member.

### **EXTENSION**

Merit review of the Extension components of the POW and how the proposed activities will integrate Extension's activities with SNRAS/AFES will consist of internal and external reviews. Internal review of the Extension components of the POW will be achieved by a panel of University of Alaska Fairbanks faculty and administrators. External reviews of the POW will be by Extension's State Advisory Council. At least one peer land grant institution in the Western Region will be recruited to review the Extension components of the POW. The different review panels will be charged with assessing how well the activities and resources proposed in the plan will contribute to achieving the proposed goals. Collective feedback from the merit reviews will be incorporated into future iterations of the Extension components of the POW. Whenever the Extension components of the POW undergo major revisions, the merit review process described above will be used to assess the utility of the proposed changes. Merit review means an evaluation whereby the quality and relevance to the State program goals are assessed.

### **Program Review Process**

a. Merit Review. Effective October 1, 1999, each 1862 land-grant institution and 1890 land-grant institution must have established a process for merit review in order to obtain agricultural research or extension formula funds. This was established in the FY 2000– 2004 5-Year POW by all institutions. b. Scientific Peer Review. A scientific peer review is required for all research funded under the Hatch Act of 1887, including Multistate Research Fund. For such research, this scientific peer review will satisfy the merit review requirement specified above. c. Reporting Requirement. As a component of the 5-Year POW, each institution depending on the type of program review required will provide a description of the merit review process or scientific peer review process established at their institution. This description should include the process used in the selection of reviewers with expertise relevant to the effort and appropriate scientific and technical standards. In the web-based software, CSREES will provide a check list with the commonly reported types of reviews, as well as a narrative text box to allow for additional information in the form of a brief narrative if needed.

## **III. Evaluation of Multis & Joint Activities**

### **1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?**

SNRAS/AFES and Extension carry out the land-grant mission for the University of Alaska. The school and experiment station have a statewide mission and operate major facilities in Fairbanks and Palmer, with research projects throughout Alaska. Extension operates eight district offices around the state along with several affiliated offices. Planned programs were developed based on needs expressed by stakeholder groups. SNRAS/AFES and Extension have separate advisory boards. Additionally, faculty and staff routinely conduct informal and formal stakeholder needs assessments for specific planned programs.

### **RESEARCH**

AFES, the research arm of the school, is funded by state appropriations, federal land grant program dollars, and competitive research grants. The school is organized into four departments: Forest Sciences, Geography, Plant, Animal, and Soil Sciences, and Resources Management. Research is carried out in response to identified needs for fundamental and practical knowledge. When state and national research priorities match the SNRAS/AFES

programmatic focus and capabilities, then our research programs direct their attention to these topics and seek support or partnerships. Some indications of the demand for SNRAS/AFES research are: 1) topics consistently found in calls for research proposals, 2) research considered especially important in the natural resources field by society at large, and 3) research problems identified by many different funding sources as important over the long term. Some of the sponsors and partners of SNRAS and AFES research that define research priorities are the Alaska Legislature, the U.S. Dept of Agriculture (especially the Agricultural Research Service, Economic Research Service, Forest Service, and Cooperative State Research, Extension, and Education Service), Alaska resource industries, National Science Foundation, Alaska Dept of Natural Resources, Bureau of Land Management, U.S. Geological Survey, National Park Service, U.S. Biological Survey, EPA, and Dept of Energy.

### **EXTENSION**

Outreach and extension programming carried out by Extension are conducted in response to identified stakeholder needs and interests. On a statewide level, Extension's State Advisory Council is an important mechanism for gathering stakeholder input. Faculty and staff also routinely conduct formal and informal stakeholder needs assessments within their local communities to determine appropriate program priorities. The strategic plans of the College of Rural and Community Development, the University of Alaska Fairbanks and the University of Alaska were developed with extensive public input provide guidance for strategic issues within Extension. Other important organizational stakeholders that influence Extension programming include, but are not limited to: Alaska Legislature, Dept of Natural Resources (Alaska), Dept of Commerce, Community & Economic Development (Alaska), Dept of Health and Social Services (Alaska), US Dept of Agriculture, Cooperative States Research, Education and Extension Service, Forest Service, Rural Development, US Dept of the Interior, Bureau of Land Management, US Fish and Wildlife Service, US Dept of Energy.

## **2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?**

### **RESEARCH**

The multistate project (W-112) has assisted reindeer and muskox herds which represent primarily Alaska Native enterprises and offers economic opportunity for native herders. Examples include bull management effects on time of breeding which is expected to improve reproductive success in native-owned reindeer herds. 2.) Hatch project ALK 01-06 "Impact Analysis for Alaska Natural Resources" and "Seafood Marketing and the Management of Marine and Aquatic Resources" (WERA 109) and other new projects will investigate the application of input-output methodologies for ongoing impact assessment. Models will include subsistence production, regional economic models particularly involving fisheries enterprises. 3.) The multistate project (W-192) Changing land management alternatives means changing the allocation of economic resources regionally and locally, and the alteration of the social and cultural importance of public lands to local communities and villages. The redirection of resources away from traditional uses has been most controversial. The question of direct and indirect economic impacts to the citizens of rural communities in public land states is of great concern.

### **JOINT ACTIVITIES**

Research is examining plant propagation and the nutraceutical properties of blueberries and other berries as joint activities between AFES, the UAF Chemistry department and a private industry partner. Extension efforts are providing consumers with information on home berry processing. Quality reindeer meat production research involves rural reindeer herders in Nome, Alaska who seek to enter the commercial high quality meat market. Researchers at AFES have developed a high quality feed which is producing excellent quality reindeer meat. Extension is working with researchers to demonstrate reindeer meat products.

### **EXTENSION**

Indigenous people make up a large proportion of Alaska's population. Despite urbanization, many Alaska Natives live in isolated rural villages with small populations and often inaccessible by surface transportation. A whole or partial subsistence lifestyle is practiced by many Alaska Natives as well as many rural residents. Extension has extensive resources it provides related to safe food preparation and preservation that supplement traditional methods. A predominate focus of Extension's Natural Resource and Community Development program will be on rural and urban community development, often with an emphasis on Alaska Native communities. The Federally Recognized Tribal Education Program, (FRTEP) serves over 40 native villages. Extension has a tradition of working with underserved populations. It has a successful Expanded Food and Nutrition Education Program (EFNEP) and it has successfully competed to be Alaska' Food Stamp Nutrition Education Program (FSNEP) provider. In cooperation with the College of Rural and Community Development, Extension is promoting science and math education in rural villages to increase Alaska Native enrollment in post-secondary science and natural resource disciplines. This effort is part of the CSREES sponsored Higher Education Project for Alaska Native and Native Hawaiian Serving Institutions.

### **3. How will the planned programs describe the expected outcomes and impacts?**

#### **RESEARCH**

Within each planned program we have listed individual research projects that will represent our Hatch general and multistate portfolio. The planned programs will then list outcomes we expect to accomplish over the next five-year period in those specific projects. We will document yearly progress in our annual report of accomplishments. We would expect some projects to have immediate impacts while other may take three to five years to reach a documented impact. Research impacts are difficult to measure.

#### **EXTENSION**

Extension is committed to greater program accountability, particularly measuring outcomes and impacts. Extension's past experience has focused on measuring outputs (number of workshops offered, number of workshop participants, number of publications distributed, etc.) versus measuring outcomes and impacts. The CSREES plan of work requirement to increase measurement of outcomes and impacts has provided the impetus to move Extension to strengthen its program evaluation. It will be an evolutionary process where faculty gain experience and comfort with outcome and impact assessment as well as including planning for evaluation during the program planning phase. To assist faculty in their collection of data to measure outcomes and impacts, Extension has implemented an on-line Faculty Data Management System. The data base system is in its first year of pilot testing and will be fully operational for the first year of the POW. Extension will provide training for faculty in capturing impacts beyond outputs.

### **4. How will the planned programs result in improved program effectiveness and/or efficiency?**

#### **RESEARCH**

The University of Alaska Fairbanks in general and SNRAS/AFES in particular has a limited number of faculty and limited funds to meet the diverse research and educational needs in Alaska. Thus, in order to improve efficiency in meeting these needs we recently developed a strategic plan which identified high priority natural resource related problems, based primarily on stakeholder input. We used these priorities combined with current faculty expertise, available physical facilities, and expected funding opportunities to develop planned programs in five emphasis areas (High Latitude Agriculture, High Latitude Soils, Management of Ecosystems, Geographic Information, and Natural Resource Use and Allocation). Within these five emphasis areas, the strategic plan commits SNRAS/AFES to: Improve efficiency of resource management in Alaska through improved transfer of critical information to resource users and the public. Hire only new faculty who specifically have expertise to meet the educational and research goals in the strategic plan, thereby increasing capabilities to meet these goals. Enhance distance delivery capabilities. Continue to seek ways to enhance stakeholder input to help identify priority research and education areas, especially as needs shift. Enhance research partnerships with public agencies and private entities.

#### **EXTENSION**

The POW process that stresses outcomes and impacts is leading Extension to devote more effort to planning for program evaluation and conducting additional and more thorough post-program assessments. With reliable and valid program assessment information, Extension will be better able to determine program effectiveness and the cost effectiveness of programs offered. This information will be critical in making future resource allocation decisions. The CSREES POW requirement to generate outcome and impact oriented objectives with related accountability expectations has lead Extension to focus its recourses on fewer high priority topics.

Faculty within Extension were charged with developing the logic models for each of the Extension-focused POW planned programs. This activity has given faculty ownership of the planned programs and responsibility for achieving the planned outcomes and impacts. Extension administration will provide faculty with guidance and support to assist them in their efforts to become better program planners and evaluators to ensure that programming responds to organizational priorities and that programs offered are assessed in relation to expected outcomes and impacts. The recently implemented Faculty Data Management System will be a useful tool in helping faculty and administration to assess programs effectiveness.

## **IV. Stakeholder Input**

### **1. Actions taken to seek stakeholder input that encourages their participation**

- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to traditional stakeholder groups
- Survey of the general public
- Use of media to announce public meetings and listening sessions

- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals

**Brief explanation.**

On-demand meetings at the request of stakeholders

These traditional meetings will continue to be focal points for listening to and receive input from stakeholders. As required by the AREERA of 1998, and in cooperation with the Cooperative Extension Service, these will be advertised as broadly as possible and identified as points of contact for public input into research and extension program development.

**RESEARCH**

SNRAS/AFES has traditionally met with regional audiences around the state in both formal and informal settings each year. Examples of these include:

- Regional and Statewide Farm Bureau
- Mat-Su Potato and Vegetable Growers
- Delta Farm Forum
- Greenhouse Growers Annual
- Reindeer Herders Association
- Alaska Northern Forest Cooperative
- Alaska Livestock Producers

**EXTENSION**

Extension jointly sponsors many agricultural and horticultural conferences and outreach activities with SNRAS/AFES where the units share mechanisms to gather formal and informal stakeholder input. Extension also relies on advisory groups as an important stakeholder needs assessment process. Extension has a Statewide Advisory Council and faculty in district across the state use local advisory committees to provide them with community input related to local program stakeholder needs and interests. The State Advisory Council meets in-person at least twice annually and has audio-conference meetings regularly throughout the fall, winter and spring. Faculty, staff and administrators within Extension are also members of the advisory committees and boards of organizations that are stakeholders of the organization. This service on committees and boards provides another venue for stakeholders to provide input to Extension.

In the fall of 2005 in preparation for the 2007-2011 POW and as part of strategic planning, all Extension faculty were required to conduct formal needs assessments within their districts and of their stakeholders. As part of their needs assessments, the faculty were required to assess the needs of underserved audiences and how they could be better served by Extension programming. The individual faculty used a variety of techniques. The faculty wrote needs assessment reports that were shared with all other faculty within Extension. The needs assessments were a critical part of Extension’s POW and strategic planning process used to identify program priorities. In addition, Extension faculty members routinely gather stakeholder input as part of their program planning and development process.

**2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them**

**1. Method to identify individuals and groups**

- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Advisory Committees
- Use Internal Focus Groups
- Use Surveys

**RESEARCH**

The SNRAS/AFES Board Of Advisors: At least twice each year (and additional meetings as deemed necessary) the Dean, Director, Department Heads, and selected faculty and students will meet with the Board of Advisors for assistance in establishing priorities and developing program direction for SNRAS/AFES in consultation with appropriate constituencies. The membership of the Board of 11 members is appointed by the UAF Chancellor on

recommendations provided by the Dean and Director and represents a broad range of scientific, industry, governmental, student, and citizen interests. By-laws for the Board of Advisors and minutes of all meetings are available upon request.

### **EXTENSION**

Members from the public who have participated in or who have an interest in Extension's program offerings represent one segment of the organization's stakeholders. Another significant stakeholder group is public and private agencies and organizations that have professional and programmatic relationships with Extension or direct interest in Extension programming. Some of Extension's major stakeholder organizations includes, but are not limited to, Alaska State Legislature, Farm Bureau, Grange, Reindeer Herders Association, Greenhouse Growers, Food Banks of Alaska, Department of Natural Resources (Alaska), Forest Service, Boys and Girls Clubs, and Future Farmers of America.

As an additional mechanism to gather stakeholder input, Extension has a State Advisory Council. The nine members of the council are appointed by the Executive Dean of the College of Rural and Community Development based upon recommendations provided by the council. The council selects candidates from individuals who apply for membership based upon a call for applications advertised to the public and from recommendations from Extension employees.

### **2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them**

#### **1. Methods for collecting Stakeholder Input**

- Meeting with invited selected individuals from the general public
- Meeting with traditional Stakeholder individuals
- Survey of the general public
- Meeting with traditional Stakeholder groups

#### **Brief explanation**

### **RESEARCH**

Periodically, the Board of Advisors develop and make available on the SNRAS website, a strategic planning survey to solicit stakeholder input from all citizens of Alaska including traditional stakeholders as well as underserved populations. The survey availability will be advertised in major newspapers, listservs, and Cooperative Extension outreach to rural sites. Updated versions of the survey will be utilized in future years as needed to maintain broad input for SNRAS/AFES programs.

### **EXTENSION**

Extension uses a wide array of methods to gather stakeholder input. The Extension Director required all faculty to conduct formal needs assessments within their districts in preparation for the 2007-2011 POW. Faculty were encouraged to include traditional customers, partners and collaborators in their assessments and to consider new clientele groups and the stakeholder groups associated with these new clientele in their needs assessment. They were also specifically required to assess the needs of underserved groups and how could be better served by Extension. When feasible, faculty use the needs assessments generated by stakeholders organizations, or other organizations like municipal governments. The most common forms of needs assessments used by Extension faculty included surveys of existing clientele, focus groups, and use of advisory committees. In support of stakeholder needs assessment, Extension administration conducted a survey of Alaska state legislators to learn directly from this important stakeholder group the issues they thought were most important to the state.

Standing advisory committees are also an important mechanism Extension uses to gather stakeholder input. Extension has a State Advisory Council composed of individuals from across the state that provide input on global issues affecting the organization like budget, program priorities, and future trends. Field-based faculty use advisory committees to provide them with stakeholder input related to programming priorities at the grassroots level.

#### **3. A statement of how the input will be considered**

- In the Budget Process
- To Set Priorities
- In the Staff Hiring Process

- To Identify Emerging Issues
- Redirect Extension Programs
- In the Action Plans
- Other (Underserved populations identified)

**Brief explanation.**

**RESEARCH**

The five research planned programs come directly from the strategic plan which was produced by the faculty of SNRAS and AFES. It reflects ideas and advice given by SNRAS and AFES client user groups, students, the board of advisors, expert advisors, state and national peers and cooperators, and UAF administration. The plan will be used to set priorities in meeting the many needs for knowledge about Alaska and circumpolar resources and geography, both as opportunities for expansion present themselves and should the need for retrenchment occur. Input is considered in the budget process. Formula funds are reallocated by the Administrative team in response to research needs determined by state and federal priorities and researcher input. Responding to emerging issues is a concern although limited by size and location. Stakeholder input influences our hiring process as we respond to the research needs of our state. We plan to add a forest health position to address the stresses and sustainability related to climate warming that is presently bringing noticeable change to the subarctic. Funding research that will help provide economic opportunities to rural communities will continue to be a priority.

**EXTENSION**

The Extension director required all faculty to conduct needs assessments in the fall of 2005 as part of a parallel POW and strategic planning process. The needs assessment results were shared with all Extension faculty and were used as part of strategic planning. The needs assessments helped faculty to identify emerging issues which led to the identification of the five planned programs that will provide the focus of Extension programming during this five-year POW cycle.

- Invasive Weeds, Noxious Plants and Pest Management
- Sustainable Individuals, Families, and Communities
- Youth Development
- Agriculture and Horticulture
- Natural Resource Stewardship

At the conclusion of strategic planning, Extension faculty were charged to form work groups around the five planned programs to generate the POW mandated logic models. The faculty used their needs assessments to assist them in the development of the logic models. The faculty also used their needs assessments to generate their individual work plans, called workloads at UAF. Within Extension administration, the faculty needs assessment results contributed to the identification of priority objectives for Extension programming. Based upon information generated by the needs assessments, future programming needs related to hiring have been affected; for example, recruitment of a new faculty in home economics with skills in nutrition and health was recently concluded. Stakeholder needs will continue to be a driving factor in determining Extension priorities and programming.