

**NORTH CENTRAL REGIONAL AQUACULTURE CENTER EXTENSION PROJECT**

**Chairperson:** Joseph E. Morris, Iowa State University

**Industry Advisory Council Liaison:** Curtis Harrison, Hurdland, Missouri

**Funding Request:** \$28,000

**Duration:** 2 Years (September 1, 2003 - August 31, 2005)

**Objectives:**

1. Strengthen linkages between North Central Regional Aquaculture Center (NCRAC) Research and Extension Work Groups.
2. Enhance the NCRAC extension network for aquaculture information transfer.
3. Develop and implement aquaculture educational programs and materials for the North Central Region (NCR).

**Proposed Budgets:**

| <b>Institution</b>                | <b>Principal Investigator(s)</b> | <b>Objective(s)</b> | <b>Year 1</b>   | <b>Year 2</b>   | <b>Total</b>    |
|-----------------------------------|----------------------------------|---------------------|-----------------|-----------------|-----------------|
| University of Wisconsin-Milwaukee | Fred P. Binkowski                | 1 & 2               | \$500           | \$500           | \$1,000         |
| Purdue University                 | Mark E. Einstein                 | 2                   | \$5,500         | \$5,500         | \$11,000        |
| Michigan State University         | Donald L. Garling                | 1 - 3               | \$3,250         | \$2,750         | \$6,000         |
| University of Minnesota-Duluth    | Jeffrey L. Gunderson             | 1 & 2               | \$500           | \$500           | \$1,000         |
| North Dakota State University     | Chester L. Hill                  | 1 & 2               | \$500           | \$500           | \$1,000         |
| Michigan State University         | Ronald E. Kinnunen               | 1 & 2               | \$500           | \$500           | \$1,000         |
| Kansas State University           | Charles D. Lee                   | 1 & 2               | \$500           | \$500           | \$1,000         |
| Purdue University                 | Brian K. Miller                  | 1 & 2               | \$500           | \$500           | \$1,000         |
| South Dakota State University     | Jerry B. Mills                   | 1 & 2               | \$500           | \$500           | \$1,000         |
| Iowa State University             | Joseph E. Morris                 | 1 & 2               | \$500           | \$500           | \$1,000         |
| University of Missouri-Columbia   | Robert A. Pierce II              | 1 & 2               | \$500           | \$500           | \$1,000         |
| University of Illinois            | Michael D. Plumer                | 1 & 2               | \$500           | \$500           | \$1,000         |
| Ohio State University             | Laura G.Tiu                      | 1 & 2               | \$500           | \$500           | \$1,000         |
| <b>Totals</b>                     |                                  |                     | <b>\$14,250</b> | <b>\$13,750</b> | <b>\$28,000</b> |

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## JUSTIFICATION

The Food and Agriculture Organization (FAO) of the United Nations estimates that more than 24% of the total animal protein in human diets is comprised of fish or shellfish products. In countries where livestock and poultry husbandry are not well developed, fish comprise up to 50% of the total animal protein consumed by humans.

In 2001 FAO reported that total world aquatic production was 142 million metric tons (MT) (FAO dataset: [Ftp.fao.org/fi/stat/windows/fishplus/fstat.zip](ftp://ftp.fao.org/fi/stat/windows/fishplus/fstat.zip); downloaded from <http://www.fao.org/fi/statist/FISOFT/FISHPLUS.asp> on April 29, 2003). This equates to about 23 kg per capita consumption of edible and non-edible aquatic products. World capture of aquatic organisms has risen rather dramatically over the last two decades, increasing by 36% from 1980 to 2001, and many stocks have been over fished. If this trend continues it will result in a serious shortfall of aquatic products in this century due to limited availability of many commercially caught species, e.g., haddock and cod.

A potential strategy to balance this shortfall is through aquacultural production. Based on FAO's most recent data (datasets: [Ftp.fao.org/fi/stat/windows/fishplus/aquaq.zip](ftp://ftp.fao.org/fi/stat/windows/fishplus/aquaq.zip) and [Ftp.fao.org/fi/stat/windows/fishplus/capdet.zip](ftp://ftp.fao.org/fi/stat/windows/fishplus/capdet.zip) downloaded from <http://www.fao.org/fi/statist/FISOFT/FISHPLUS.asp> on April 29, 2003), 34% of the world's aquatic production is generated by aquaculture. On a global basis, aquaculture production has risen dramatically over the last decade. In 1992, aquaculture produced 21.2 million MT of aquatic products whereas in 2001 this value had increased to 48.4 million MT, a 128% increase. It is predicted that the role of aquaculture in meeting the demands for aquatic production will continue to increase over the next several decades. Based on FAO data, U.S. aquaculture produced about 1% of the world's total aquacultural production in 2001.

The increase in the world population and the subsequent increased demand for fish products has caused fish prices to increase significantly. For example, since 1967 the price for fish products has risen faster than any other commodity in the United States. Almost all the channel catfish and rainbow trout consumed in the U.S. are produced through aquaculture. Catfish sales were valued at \$351 million and trout sales in the U.S. equaled \$72 million in 1995 (Harvey 1996). Total sales value of all aquaculture produced seafood products in the U.S. in 1990 was \$760 million, which represents a growth rate of 265% between 1980 and 1990.

As Americans become more health conscious, the demand for fisheries production has increased; per capita consumption in the U.S. has grown from 5.7 kg in 1980 to 6.7 kg in 2001 (NMFS 2002). Aquaculture has proceeded to capture a larger percentage of the seafood market at the expense of the commercial harvests. It is estimated that aquaculture could supply approximately 25% of all the seafood consumed in the U.S. (Harvey 1994).

The U.S. imported over \$18.5 billion of seafood products (edible and nonedible) in 2001 versus \$11.8 billion exported for a trade deficit of \$6.7 billion (NMFS 2002). A healthy U.S. aquaculture industry would reduce the need to import fish products and help improve the U.S. trade imbalance, a fact increasingly recognized in Washington, D.C.. Given the high demand for fishery products, the premium value of aquaculture products, and the vast quantity of water resources in the North Central Region (NCR), a viable aquaculture industry utilizing these resources would have a substantial economic impact on the region and the entire United States. This region has approximately 25% of the country's population but produces less than 2% of the fish consumed.

Aquaculture-related business in the NCR has increased dramatically in the past several years and is on the verge of making a leap forward. This is evident in the interest in and the requests for information channeled through the U.S. Department of Agriculture (USDA) and the North Central Regional Aquaculture Center (NCRAC) Extension Work Group, Cooperative Extension Service (CES), and Sea Grant/Marine Advisory Extension networks. Interest in aquaculture is also evident in the increased activity of small, privately owned farm ponds, backyard hatcheries, fee-fishing operations and, in some cases, more creative attempts to utilize the multiple strategy production concept, which includes domestic animals, plants, and finfish.

Aquaculture resource conditions in the NCR are ideally suited for both coldwater and coolwater species, e.g., ciscos, hybrid striped bass, northern pike, salmon, trout, walleye, whitefish, and yellow perch, all of which are

marketable. While some states in this region, e.g., Kansas and Missouri, have established channel catfish operations similar to the southern states, it is necessary to consider coolwater and coldwater species as alternatives due to prevailing regional climatic conditions. It is expected that indoor recirculating systems will become more popular once they are proven to be economically feasible.

Aquaculture can be the catalyst for new industries and enhance the competitiveness of regional businesses while maintaining the quality of living to which regional residents have become accustomed. Over the next 10 years aquacultural production in the region will come to equal to, if not surpass, the wild production of fish utilized for human consumption. Undoubtedly, commercial fishing will be strictly regulated by quotas and out-competed by recreational fishing, thus reducing the amount of fish for retail sales. Consequently, seafood products will become more dependent on aquaculture.

For the NCR to capitalize on potential aquaculture opportunities, new directions and technologies should be explored. The best hopes for expansion lie with regionally popular species. Successful aquaculture endeavors elsewhere have developed within the context of pre-existing, functioning markets with relatively high prices. Opportunities for competitive regional aquaculture for food purposes are expected to increase.

Recreational fisheries and tourism provide another avenue of opportunity for aquaculture development. Public agencies envision a greater role for private fish farms and aquaculture facilities operated partly or fully by private groups in meeting the needs for stocking that have traditionally been satisfied by public hatcheries. Bait production and fee-based recreational fishing near population centers also provide opportunities for regional aquaculture expansion.

An essential mechanism for the transfer of aquacultural technology to practicing fish farmers requires an effective communication bridge between university researchers and the public. This is one of the primary goals of the NCRAC Extension Work Group.

With the expected growth of the regional aquaculture industry, a new demand and broader market for all kinds of technical information and aquacultural services has evolved. As novices enter aquaculture, they seek guidance from knowledgeable and experienced persons, commonly from CES and Sea Grant agents, as well as natural resource agencies.

Hundreds of inquiries by persons interested in the potential of regional species for aquaculture are referred to NCRAC extension contacts each year. Persons requesting information have diverse backgrounds with interests that include operating small plastic pools for backyard aquaculture, advice on small ponds which they own, bait dealers with ponds, seafood dealers, restaurant owners interested in producing fresh fish on their own, representatives of Native American groups interested in starting self-contained aquaculture operations on tribal lands, and even aquacultural consultants representing serious entrepreneurs with financial backing.

This need for advice is also clearly evident by the high level of public participation that occurred during previous aquaculture lecture/seminar series presented by NCRAC extension specialists. Most participants expressed a need for more readily available specific advice on aquaculture above and beyond that available in short lecture sessions. Some individuals suggested the need for a regional "clearing house" of information, for reading lists of pertinent literature, audiovisuals, problem-solving workshops, and for specific hands-on training.

## **RELATED CURRENT AND PREVIOUS WORK**

NCRAC has funded eight previous aquaculture extension projects, all designed to assess and meet the information needs of the various clientele groups through cooperative and coordinated regional educational programming. A network of Sea Grant and CES-designated contacts has been established to help maximize efficiency of education programs in the 12-state NCR. However, many of these contacts are part-time on aquaculture and need additional resources to meet the growing demands of the aquaculture industry.

In spite of the limited number of aquacultural full-time equivalent positions (currently less than three) in this region, substantial progress has been made by the NCRAC Extension Work Group. Extension liaisons are

involved in several of the NCRAC research projects, e.g., hybrid striped bass, walleye, and yellow perch; and have helped improve the information transfer from research work groups to the public. Extension liaisons have also assisted with the planning, promotion, and implementation of hybrid striped bass, walleye, and yellow perch workshops held throughout the region. These workshops have included "hands-on" experiences, formal presentations, as well as industry forum sessions whereby producers share their experience with other producers as well as extension specialists. The NCRAC Extension Work Group has also assisted NCRAC researchers by providing information relevant to the development of cost of production budgets for the commercial culture of food-sized hybrid striped bass, walleye, and yellow perch in the NCR.

Previous project activities have led to the development and publication of a number of aquaculture fact sheets and technical bulletins that are available to the public both in hard copy and on the Web. These publications have covered an array of topics, including in part: (1) walleye fingerling culture, (2) salt usage, (3) starting an aquaculture operation, (4) overview of aquaculture, (5) aquaculture as a business enterprise, (6) survey of salmonid producers, (7) channel catfish culture, (8) niche marketing, and (9) plankton management for fish culture ponds. These documents have been used to supplement individual states' publications in this region. In 1994, a regional survey was undertaken to determine the use of NCRAC extension publications. It was estimated that approximately 15,000 client questions are addressed annually by these publications; publications related to basic aquaculture topics were used most often. Aquaculture handbooks have also been developed and distributed to each NCRAC-designated aquaculture extension specialist and selected CES and Sea Grant field staff.

Members of the NCRAC Extension Work Group have organized and conducted workshops on general aquaculture, fish diseases, commercial recirculation systems, aquaculture business planning, crayfish culture, pond management, yellow perch and hybrid striped bass culture, rainbow trout production, in-service training for high school vocational-agricultural teachers, polyploid induction in sunfish, and organic aquaculture standards during previously-funded projects. These workshops have often been undertaken using a combination of regional extension specialists and researchers as well as industry representatives. Gunderson, University of Minnesota-Duluth (UMD); Kinnunen, Michigan State University (MSU); and Morris, Iowa State University (ISU) were actively involved in the development of the critically acclaimed NCRAC Walleye Culture Manual as well as several regional walleye culture workshops. The 415-page Walleye Culture Manual is available to the public for a nominal cost; it has 17 chapters and 46 case studies. NCRAC has recently published the Sunfish Culture Guide. It was co-edited by Morris (ISU) and Garling (MSU) and details various facets of sunfish culture including, in part, their biology and culture as well as their diseases.

Four North Central Regional Aquaculture Conferences have been held in the region which were organized and conducted by Extension Work Group members. The first in Kalamazoo, Michigan was held in March 1991 (Garling, MSU), the second was held in February 1995 in Minneapolis, Minnesota (Gunderson, UMD), the third conference was held in Indianapolis, Indiana in February 1997 (LaDon Swann, Purdue University), and the fourth was held in Columbia, Missouri in February 1999 (Pierce, University of Missouri-Columbia [UMC]). These regional meetings were attended by hundreds of individuals including persons from Canada.

Since its inception in 1994 by LaDon Swann (formerly at Purdue University), the Aquaculture Network Information Center, AquaNIC, has been a funded component of previous NCRAC Extension projects. AquaNIC has become the premier Web site for aquaculture information housing over 8,000 electronic publications, images, slide sets, videos, and directories and links to 190 other aquaculture and fisheries Web sites. It had 11.5 million hits from 1.2 million visitors in 2002.

In addition, several NCRAC Extension Work Group members have been instrumental in fostering the continued growth of the aquaculture industry in the region. For example, Pierce (UMC), has created the Cooperative Extension Aquaculture and Marketing Educational Program to facilitate the development and implementation of aquaculture educational programs in Missouri. Tiu (Ohio State University [OSU]) has also worked to revitalize the Ohio Aquaculture Association (OAA) as well as continuing to coordinate monthly OAA board meetings and edit the OAA newsletter. Many NCRAC extension contacts have also worked with industry and governmental representatives to produce state aquaculture plans and improve governmental regulations. These interactions have been of great benefit to the aquaculture industry as recognized by the NCRAC Industry Advisory Council who annually lift up Extension as a top priority for funding.

## ANTICIPATED BENEFITS

There are several user groups that need to be served by the aquaculture extension contacts. First are the existing aquaculture industry members who need relevant information on new techniques and technologies in aquaculture as well as upcoming concerns related to changing state and federal regulations. A second user group is the large number of individuals interested in aquaculture as a means of agriculture diversification. This group often requires an enormous amount of time to educate and can benefit most from the electronic media. The last group is secondary educators (both middle school and high school) who often use aquaculture extension materials in their classrooms. These groups will be served by the NCRAC Extension Work Group. The Work Group will continue and expand its efforts to promote and advance commercial aquaculture in a responsible fashion through an organized education/training outreach program. The primary benefits are: increased public awareness through publications, short courses, and conferences regarding the potential of aquaculture as a viable agricultural enterprise in the NCR; technology transfer to enhance current and future production methodologies for selected species, e.g., hybrid striped bass, salmonids, sunfish, walleye, and yellow perch; improved lines of communication between interstate aquaculture extension specialists and associated industry contacts; and an enhanced legal and socioeconomic atmosphere for aquaculture in the NCR. The continued development of aquaculture education programs for the NCR will provide "hands-on" opportunities for prospective and experienced producers. The programs for the experienced producers will allow for extension personnel to learn of the problems encountered by the producers who will then later relay this information to the NCRAC research community for possible solutions.

Fact sheets, technical bulletins, and videos have served to inform a variety of clients about numerous aquaculture practices for the NCR. For instance, "Making Plans for Commercial Aquaculture in the North Central Region" is often used to provide clients with initial information about aquaculture, while species-specific publications on walleye, trout, and catfish have been used in numerous regional meetings and have been requested by clients from throughout the United States. Publications on organizational structure for aquaculture businesses, transportation of fish in bags, and others are beneficial to both new and established aquaculturists.

AquaNIC has become a major portal for accessibility to aquaculture information 24 hours per day, seven days per week. No longer are clientele groups limited to obtaining information during normal business hours. AquaNIC is financially supported by a number of different organizations including the Mississippi-Alabama Sea Grant Consortium, Auburn University, Illinois-Indiana Sea Grant College Program, the National Sea Grant College Program, and NCRAC. The loss of any of these funding sources and the potential shut-down of AquaNIC would create an untenable situation for the regional aquaculture extension specialist and the loss of a tool that has become essential to them and many within the greater aquacultural community because:

- ▶ Current and prospective producers use AquaNIC as a source of reference (i.e., species and systems pages, Regional Aquaculture Center publications, directories, calendar of events);
- ▶ Employers who post jobs benefit from an increased pool of applicants for open positions;
- ▶ Customers seeking jobs benefit from increased exposure by posting their résumés online;
- ▶ CES and Sea Grant educators benefit from increased access to electronic media (i.e., photographs, slide sets, and publications) essential to developing outreach programs; and
- ▶ All customers benefit from the "gateway" or "portal" services provided by AquaNIC through decreased time searching for information (i.e., companies, universities involved in aquaculture, CES, and Sea Grant contacts, federal agencies, and other Web links to aquaculture information).

## OBJECTIVES

1. Strengthen linkages between the North Central Regional Aquaculture Center (NCRAC) Research and Extension Work Groups.
2. Enhance the NCRAC extension network for aquaculture information transfer.
3. Develop and implement aquaculture education programs and materials.

## PROCEDURES

### Strengthen Linkages (Objective 1)

Since the inception of NCRAC there has been a concerted effort to strengthen the ties between research and extension activities. Some research projects have even included objectives related to outreach and extension activities. But whether there has been a specific extension objective or not, every NCRAC research work group has had an extension liaison who is a member of the Extension Work Group. The extension liaison is either a funded participant or has been assigned to the research work group. The extension liaisons are responsible for interacting with the work group in developing possible extension products based on outcomes of these projects as well as assisting in writing research projects' annual and/or termination reports. The table below lists the research work groups and the extension liaison.

| Research Work Group | Extension Liaison    | State |
|---------------------|----------------------|-------|
| Economics/Marketing | Ronald E. Kinnunen   | MI    |
| Wastes Effluents    | Fred P. Binkowski    | WI    |
| Baitfish            | Jeffery L. Gunderson | MN    |
| Hybrid Striped Bass | Joseph E. Morris     | IA    |
| Salmonids           | Ronald E. Kinnunen   | MI    |
| Sunfish             | Joseph E. Morris     | IA    |
| Tilapia             | Donald G. Garling    | MI    |
| Walleye             | Ronald E. Kinnunen   | MI    |
| Yellow Perch        | Donald L. Garling    | MI    |

### Enhance Extension Network (Objective 2)

At least one contact person has been designated by CES for each NCR state, an extension contact directory has been developed and kept current, and a mechanism for sharing materials produced by individual states has been established through NCRAC's Associate Director's office at Iowa State University. Liaisons with state and federal agencies, and with state aquaculture organizations have been developed to identify industry needs. With the continued shortages in aquaculture extension personnel, this network has been critical to the ability of individual extension contacts to respond to information requests from their clients. In fact, many of these contacts often respond on a regular basis to client inquiries outside of their specific state. These activities will be continued and coordinated by Morris (ISU).

#### AquaNIC Support (\$11,000 - Einstein, Purdue)

An additional activity that the NCRAC Board approved, that was of high priority to the Center's Industry Advisory Council (IAC), was the continued partial support of AquaNIC. As mentioned earlier, AquaNIC has become the premier Web site for aquaculture information and it is also the home of NCRAC's Web site. Einstein (Purdue University) has been the Web master for AquaNIC ever since it was conceptualized by LaDon Swann (formerly at Purdue University but now the director of the Mississippi-Alabama Sea Grant program) and brought online in 1994. Both AquaNIC and NCRAC's Web site will be maintained by Einstein. Upgrades to AquaNIC will be installed if necessary to enhance the usability and functionality of organized chats and streaming media, the latter of which will enhance extension personnel's abilities to provide online instruction.

### Develop and Implement Aquaculture Education Programs and Materials (Objective 3)

Another activity that the NCRAC Board approved, that was of high priority to the Center's IAC, was a state-by-state assessment of aquacultural best management practices (BMPs) and regulations affecting the NCR aquaculture industry.

#### State BMPs and Regulations Survey (\$5,000 - Garling, MSU)

##### *Action One*

Once each year, the state aquaculture coordinator, as identified by the National Association of State Aquaculture Coordinators in the 12-state NCR and nine states adjacent to the NCR (Arkansas, Colorado, Kentucky, Montana, Oklahoma, Pennsylvania, Tennessee, West Virginia, and Wyoming), will be contacted to determine the appropriate in-state contact for aquaculture in the natural resources management agency, agriculture department, and state aquaculture association.

##### *Action Two*

Once each year, each natural resources management agency and agriculture department aquaculture contact person will be contacted to request:

1. Names and contact information for individuals responsible for fish transportation and importation permits.
2. Copies of laws, rules, and written policies for in-state, entry, health certification, and transportation requirements for aquaculture species in five categories (bait fish, game fish, food fish, Asiatic carps, and other species) from the agency and from the individual contact persons.
3. Information on any current or anticipated requirements for BMP/GAMP (Best Management Practices/Generally Accepted Management Practices) for commercial aquaculture operations (including any requirements for BMP/GAMP by the state environmental quality/enforcement departments). Copies of any BMP/GAMPs that have been developed for state agency hatcheries or as models for state commercial aquaculture facilities will be requested.

##### *Action Three*

Each state aquaculture association president will be contacted to request their association's assessment of needs relative to transportation and importation requirements for aquaculture species and BMP/GAMPs.

##### *Outputs*

Output 1: Transportation Requirements—develop a virtual fact sheet that will be annually updated and posted on the NCRAC Web site during the length of this project that **clearly states the need for personal contact** with the state permitting contact person immediately prior to shipping aquacultural species to states within and adjacent to the NCR. In addition, the fact sheet will include a matrix indicating, **at the time of posting**, the types of permits required (transportation/import and health assessment) for each of the five categories above, a list of the state aquaculture contacts, management/agriculture agency contacts, and individuals responsible for permits, and a copy of laws, rules, and written policies for import, transportation, and health inspection of aquaculture species. Where possible, Web links for this information will be included.

Output 2: BMP/GAMPs—develop a Web-based virtual fact sheet that will be annually updated and posted on the NCRAC Web site during the length of this project. The fact sheet will include a short synopsis of the potential value and use of BMP/GAMPs, a list of any requirements for BMP/GAMPs by regulatory agencies in the NCR **at the time of posting**, and copies or contacts for existing BMP/GAMPs that are in the public domain (including Web links).

## REFERENCES

- Harvey, D. 1994. Aquaculture: situation and outlook report. United States Department of Agriculture, Economic Research Service, AQS-12, Washington, D.C.
- Harvey, D. 1996. Aquaculture outlook. United States Department of Agriculture, Economic Research Service, LDP-AQS-4, Washington, D.C.



NMFS (National Marine Fisheries Service). 2002. Current fishery statistics no. 2001: fisheries of the United States, 2001. U. S. Department of Commerce, National Oceanographic Atmospheric Association, National Marine Fisheries Service, Silver Springs, Maryland.

## PROJECT LEADERS

| <u>State</u>        | <u>Name</u>                             | <u>Institution</u>                                     |
|---------------------|---|--|
| <b>Illinois</b>     | Michael D. Plumer                       | University of Illinois                                 |
| <b>Indiana</b>      | Mark E. Einstein<br>Brian K. Miller     | Purdue University<br>Purdue University                 |
| <b>Iowa</b>         | Joseph E. Morris                        | Iowa State University                                  |
| <b>Kansas</b>       | Charles D. Lee                          | Kansas State University                                |
| <b>Michigan</b>     | Donald L. Garling<br>Ronald E. Kinnunen | Michigan State University<br>Michigan State University |
| <b>Minnesota</b>    | Jeffrey L. Gunderson                    | University of Minnesota-Duluth                         |
| <b>Missouri</b>     | Robert A. Pierce II                     | University of Missouri-Columbia                        |
| <b>North Dakota</b> | Chester L. Hill                         | North Dakota State University                          |
| <b>Ohio</b>         | Laura G. Tiu                            | Ohio State University                                  |
| <b>South Dakota</b> | Jerry B. Mills                          | South Dakota State University                          |
| <b>Wisconsin</b>    | Fred P. Binkowski                       | University of Wisconsin-Milwaukee                      |

**PARTICIPATING INSTITUTIONS AND PRINCIPAL INVESTIGATORS**

**University of Wisconsin-Milwaukee (UW-Milwaukee)**

Fred P. Binkowski

**Purdue University (Purdue)**

Mark E. Einstein

**Michigan State University (MSU)**

Donald L. Garling

**University of Minnesota-Duluth (UMD)**

Jeffrey L. Gunderson

**North Dakota State University (NDSU)**

Chester L. Hill

**Michigan State University (MSU)**

Ronald E. Kinnunen

**Kansas State University (KSU)**

Charles D. Lee

**Purdue University (Purdue)**

Brian K. Miller

**South Dakota State University**

Jerry B. Mills

**Iowa State University (ISU)**

Joseph E. Morris

**University of Missouri-Columbia (UMC)**

Robert A. Pierce II

**University of Illinois (UI)**

Michael D. Plumer

**Ohio State University (OSU)**

Laura G. Tiu

## PROPOSED ACTIVITIES FOR UNIVERSITY OF WISCONSIN-MILWAUKEE

(Binkowski)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
  - b. Assisting in the development of extension publications (fact sheets or bulletins) on knowledge gained from research by the Wastes/Effluents Work Group.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Wisconsin to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Wisconsin.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

**BUDGET**

|   |  |  |   |                                 |  |   |  |  |  |
|---|--|--|---|---------------------------------|--|---|--|--|--|
| ORGANIZATION AND ADDRESS<br>Great Lakes WATER Institute<br>University of Wisconsin-Milwaukee<br>Milwaukee, WI 53204   |  |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |                                 |  |   |  |  |  |
| PROJECT DIRECTOR(S)<br>Fred P. Binkowski  |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____ | Non-Federal Proposed Cost-Sharing/Matching Funds (If required) | Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different) |  |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |                                 |  |   |  |  |  |
|   |  |  | Calendar                                | Academic                        | Summer   |   |  |  |  |
| a. ___ (Co)-PD(s) .....   |  |  |   |                                 |  |   |  |  |  |
| b. ___ Senior Associates .....  |  |  |   |                                 |  |   |  |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |                                 |  |   |  |  |  |
| a. ___ Research Associates-Postdoctorates ...   |  |  |   |                                 |  |   |  |  |  |
| b. ___ Other Professionals .....  |  |  |   |                                 |  |   |  |  |  |
| c. ___ Paraprofessionals .....  |  |  |   |                                 |  |   |  |  |  |
| d. ___ Graduate Students .....  |  |  |   |                                 |  |   |  |  |  |
| e. ___ Prebaccalaureate Students .....  |  |  |   |                                 |  |   |  |  |  |
| f. ___ Secretarial-Clerical .....   |  |  |   |                                 |  |   |  |  |  |
| g. ___ Technical, Shop and Other .....  |  |  |   |                                 |  |   |  |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   |                                 |  | \$0   |  |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |                                 |  |   |  |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   |                                 |  | \$0   |  |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |                                 |  |   |  |  |  |
| <b>E. Materials and Supplies</b>  |  |  |   |                                 |  |   |  |  |  |
| <b>F. Travel</b>  |  |  |   |                                 |  | \$500   |  |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |                                 |  |   |  |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |                                 |  |   |  |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |                                 |  |   |  |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |                                 |  |   |  |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   |                                 |  | \$500   |  |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                 |  |   |  |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   |                                 |  | \$500   |  |  |  |
| <b>N. Other</b> ..... →   |  |  |   |                                 |  |   |  |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   |                                 |  | \$500   |  |  |  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |  |  |
|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE</b> (Type or print)           | <b>SIGNATURE</b> (required for revised budget only) | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.  
 Form CSREES-2004 (12/2000)

**BUDGET**

|  |  |  |   |                                 |   |  |
|--|--|--|---|---------------------------------|---|--|
| ORGANIZATION AND ADDRESS<br>Great Lakes WATER Institute<br>University of Wisconsin-Milwaukee<br>Milwaukee, WI 53204  |  |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |                                 |   |  |
| PROJECT DIRECTOR(S)<br>Fred P. Binkowski   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____ | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |                                 |   |  |
|  |  |  | Calendar                                | Academic                        | Summer  |  |
| a. ___ (Co)-PD(s) .....  |  |  |   |                                 |   |  |
| b. ___ Senior Associates .....   |  |  |   |                                 |   |  |
| 2. No. of Other Personnel (Non-Faculty)  |  |  |   |                                 |   |  |
| a. ___ Research Associates-Postdoctorates . . .  |  |  |   |                                 |   |  |
| b. ___ Other Professionals .....   |  |  |   |                                 |   |  |
| c. ___ Paraprofessionals .....   |  |  |   |                                 |   |  |
| d. ___ Graduate Students .....   |  |  |   |                                 |   |  |
| e. ___ Prebaccalaureate Students .....   |  |  |   |                                 |   |  |
| f. ___ Secretarial-Clerical .....  |  |  |   |                                 |   |  |
| g. ___ Technical, Shop and Other .....   |  |  |   |                                 |   |  |
| <b>Total Salaries and Wages</b> .....  |  |  |   |                                 |   | \$0  |
| B. Fringe Benefits (If charged as Direct Costs)  |  |  |   |                                 |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....  |  |  |   |                                 |   | \$0  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |  |   |                                 |   |  |
| E. Materials and Supplies  |  |  |   |                                 |   |  |
| F. Travel  |  |  |   |                                 |   | \$500  |
| G. Publication Costs/Page Charges  |  |  |   |                                 |   |  |
| H. Computer (ADPE) Costs   |  |  |   |                                 |   |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |  |   |                                 |   |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |  |   |                                 |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....   |  |  |   |                                 |   | \$500  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                 |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....   |  |  |   |                                 |   | \$500  |
| N. Other .....   |  |  |   |                                 |   |  |
| <b>O. Total Amount of This Request</b> .....   |  |  |   |                                 |   | \$500  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |  |  |   |  |
|--|--|--|---|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |   |  |
| Cash (both Applicant and Third Party) .....                                  |  |  | → |  |
| Non-Cash Contributions (both Applicant and Third Party) .....                |  |  | → |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE</b> (Type or print)           | <b>SIGNATURE</b> (required for revised budget only) | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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**BUDGET**

|  |   |  |   |                                    |  |   |  |
|--|---|--|---|------------------------------------|--|---|--|
| ORGANIZATION AND ADDRESS<br>Great Lakes WATER Institute<br>University of Wisconsin-Milwaukee<br>Milwaukee, WI 53204  |   |  | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |  |
| PROJECT DIRECTOR(S)<br>Fred P. Binkowski   |   |  | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |   |  | <b>CSREES FUNDED WORK MONTHS</b>                |                                    |  |   |  |
|  |   |  | Calendar  | Academic                           | Summer   |   |  |
| a. ___ (Co)-PD(s) .....  |   |  |   |                                    |  |   |  |
| b. ___ Senior Associates .....   |   |  |   |                                    |  |   |  |
| 2. No. of Other Personnel (Non-Faculty)<br>a. ___ Research Associates-Postdoctorates . . .   |   |  |   |                                    |  |   |  |
| b. ___ Other Professionals .....   |   |  |   |                                    |  |   |  |
| c. ___ Paraprofessionals .....   |   |  |   |                                    |  |   |  |
| d. ___ Graduate Students .....   |   |  |   |                                    |  |   |  |
| e. ___ Prebaccalaureate Students .....   |   |  |   |                                    |  |   |  |
| f. ___ Secretarial-Clerical .....  |   |  |   |                                    |  |   |  |
| g. ___ Technical, Shop and Other .....   |   |  |   |                                    |  |   |  |
| <b>Total Salaries and Wages</b> ..... →  |   |  |   |                                    |  | \$0   |  |
| B. Fringe Benefits (If charged as Direct Costs)  |   |  |   |                                    |  |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →  |   |  |   |                                    |  | \$0   |  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |   |  |   |                                    |  |   |  |
| E. Materials and Supplies  |   |  |   |                                    |  |   |  |
| F. Travel  |   |  |   |                                    |  | \$1,000   |  |
| G. Publication Costs/Page Charges  |   |  |   |                                    |  |   |  |
| H. Computer (ADPE) Costs   |   |  |   |                                    |  |   |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |   |  |   |                                    |  |   |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |  |   |                                    |  |   |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →   |   |  |   |                                    |  | \$1,000   |  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |                                    |  |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →   |   |  |   |                                    |  | \$1,000   |  |
| N. Other .....   |   |  |   |                                    |  |   |  |
| <b>O. Total Amount of This Request</b> ..... →   |   |  |   |                                    |  | \$1,000   |  |
| <b>P. Carryover -- (If Applicable)</b> .....   |   |  | <b>Federal Funds: \$</b>                        | <b>Non-Federal funds: \$</b>       | <b>Total \$</b>  |   |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |   |  |   |                                    |  |   |  |
| Cash (both Applicant and Third Party) .....  |   |  |   |                                    |  |   |  |
| Non-Cash Contributions (both Applicant and Third Party) .....  |   |  |   |                                    |  |   |  |
| <b>NAME AND TITLE</b> (Type or print)  | <b>SIGNATURE</b> (required for revised budget only) |  |   |                                    | <b>DATE</b>  |   |  |
| Project Director   |   |  |   |                                    |  |   |  |
| Authorized Organizational Representative   |   |  |   |                                    |  |   |  |
| Signature (for optional use)   |   |  |   |                                    |  |   |  |

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**BUDGET EXPLANATION FOR UNIVERSITY OF WISCONSIN-MILWAUKEE**

**(Binkowski)**

**Objectives 1 and 2**

- F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Wisconsin Aquaculture Association at a destination to be determined by the aquaculture association (\$500).



## PROPOSED ACTIVITIES FOR PURDUE UNIVERSITY

(Einstein)

### Major Actions for Each Objective

2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Managing the AquaNIC and NCRAC Web sites located at Purdue University.

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|  |   |  |                                     |   |   |  |  |
|--|---|--|-------------------------------------|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Purdue Research Foundation<br>Office of Sponsored Programs<br>West Lafayette, IN 47907-1021  |   |  | USDA AWARD NO. Year 1: Objective 2  |   |   |  |  |
|  |   |  | Duration Proposed Months: <u>12</u> | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Mark E. Einstein  |   |  | Funds Requested by Proposer         | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b>   |   |  | <b>CSREES FUNDED WORK MONTHS</b>    |   |   |  |  |
|  |   |  | Calendar                            | Academic                                | Summer  |  |  |
| 1. No. of Senior Personnel   |   |  |                                     |   |   |  |  |
| a. ___ (Co)-PD(s) .....  |   |  |                                     |   |   |  |  |
| b. ___ Senior Associates .....   |   |  |                                     |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)  |   |  |                                     |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .  |   |  |                                     |   |   |  |  |
| b. ___ Other Professionals .....   |   |  |                                     |   |   |  |  |
| c. ___ Paraprofessionals .....   |   |  |                                     |   |   |  |  |
| d. ___ Graduate Students .....   |   |  |                                     |   |   |  |  |
| e. ___ Prebaccalaureate Students .....   |   |  |                                     |   |   |  |  |
| f. ___ Secretarial-Clerical .....  |   |  |                                     |   |   |  |  |
| g. ___ Technical, Shop and Other .....   |   |  |                                     |   |   |  |  |
| <b>Total Salaries and Wages</b> .....  |   |  |                                     |   |   |  |  |
|  |   |  | \$0                                 | \$0                                     | \$0   | \$0  |  |
| B. Fringe Benefits (If charged as Direct Costs)  |   |  |                                     |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....  |   |  | \$0                                 | 0                                       | \$0   | \$0  |  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |   |  |                                     |   |   |  |  |
| E. Materials and Supplies  |   |  | \$3,500                             |   |   |  |  |
| F. Travel  |   |  | \$2,000                             |   |   |  |  |
| G. Publication Costs/Page Charges  |   |  |                                     |   |   |  |  |
| H. Computer (ADPE) Costs   |   |  |                                     |   |   |  |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |   |  |                                     |   |   |  |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |  |                                     |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> .....   |   |  | \$5,500                             | 0                                       | \$0   | \$0  |  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |                                     |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....   |   |  | \$5,500                             | 0                                       | \$0   | \$0  |  |
| N. Other .....   |   |  |                                     |   |   |  |  |
| <b>O. Total Amount of This Request</b> .....   |   |  | \$5,500                             | 0                                       | \$0   | \$0  |  |
| <b>P. Carryover -- (If Applicable)</b> .....   |   |  | <b>Federal Funds: \$</b>            | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |   |  |                                     |   |   |  |  |
| Cash (both Applicant and Third Party) .....  |   |  |                                     |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) .....  |   |  |                                     |   |   |  |  |
| <b>NAME AND TITLE</b> (Type or print)  | <b>SIGNATURE</b> (required for revised budget only) |  |                                     |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>  |   |  |                                     |   |   |  |  |
| <b>Authorized Organizational Representative</b>  |   |  |                                     |   |   |  |  |
| <b>Signature (for optional use)</b>  |   |  |                                     |   |   |  |  |

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**BUDGET**

|  |  |   |                                     |   |   |  |  |
|--|--|---|-------------------------------------|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Purdue Research Foundation<br>Office of Sponsored Programs<br>West Lafayette, IN 47907-1021  |  |   | USDA AWARD NO. Year 2: Objective 2  |   |   |  |  |
|  |  |   | Duration Proposed Months: <u>12</u> | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Mark E. Einstein  |  |   | Funds Requested by Proposer         | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b>   |  |   | <b>CSREES FUNDED WORK MONTHS</b>    |   |   |  |  |
|  |  |   | Calendar                            | Academic                                | Summer  |  |  |
| 1. No. of Senior Personnel   |  |   |                                     |   |   |  |  |
| a. ___ (Co)-PD(s) .....  |  |   |                                     |   |   |  |  |
| b. ___ Senior Associates .....   |  |   |                                     |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)  |  |   |                                     |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .  |  |   |                                     |   |   |  |  |
| b. ___ Other Professionals .....   |  |   |                                     |   |   |  |  |
| c. ___ Paraprofessionals .....   |  |   |                                     |   |   |  |  |
| d. ___ Graduate Students .....   |  |   |                                     |   |   |  |  |
| e. ___ Prebaccalaureate Students .....   |  |   |                                     |   |   |  |  |
| f. ___ Secretarial-Clerical .....  |  |   |                                     |   |   |  |  |
| g. ___ Technical, Shop and Other .....   |  |   |                                     |   |   |  |  |
| <b>Total Salaries and Wages</b> .....  |  |   |                                     |   |   |  |  |
|  |  |   | \$0                                 | \$0                                     | \$0   | \$0  |  |
| B. Fringe Benefits (If charged as Direct Costs)  |  |   |                                     |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....  |  |   | \$0                                 | 0                                       | \$0   | \$0  |  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |   |                                     |   |   |  |  |
| E. Materials and Supplies  |  |   | \$3,500                             |   |   |  |  |
| F. Travel  |  |   | \$2,000                             |   |   |  |  |
| G. Publication Costs/Page Charges  |  |   |                                     |   |   |  |  |
| H. Computer (ADPE) Costs   |  |   |                                     |   |   |  |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |   |                                     |   |   |  |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |   |                                     |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> .....   |  |   | \$5,500                             | 0                                       | \$0   | \$0  |  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |   |                                     |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....   |  |   | \$5,500                             | 0                                       | \$0   | \$0  |  |
| N. Other .....   |  |   |                                     |   |   |  |  |
| <b>O. Total Amount of This Request</b> .....   |  |   | \$5,500                             | 0                                       | \$0   | \$0  |  |
| <b>P. Carryover -- (If Applicable)</b> .....   |  |   | Federal Funds: \$                   | Non-Federal funds: \$                   | Total \$  |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |  |   |                                     |   |   |  |  |
| Cash (both Applicant and Third Party) .....  |  |   |                                     |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) .....  |  |   |                                     |   |   |  |  |
| <b>NAME AND TITLE</b> (Type or print)  |  | <b>SIGNATURE</b> (required for revised budget only) |                                     |   | <b>DATE</b>   |  |  |
| Project Director   |  |   |                                     |   |   |  |  |
| Authorized Organizational Representative   |  |   |                                     |   |   |  |  |
| Signature (for optional use)   |  |   |                                     |   |   |  |  |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.

**BUDGET**

|   |   |          |  |   |   |  |
|---|---|----------|--|---|---|--|
| ORGANIZATION AND ADDRESS<br>Purdue Research Foundation<br>Office of Sponsored Programs<br>West Lafayette, IN 47907-1021   |   |          | USDA AWARD NO.    Years 1 & 2: Objective 2 |   |   |  |
|   |   |          | Duration Proposed Months: <u>24</u>        | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Mark E. Einstein   |   |          | Funds Requested by Proposer                | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |  |   |   |  |
|   |   | Calendar | Academic                                   | Summer                                  |   |  |
| 1. No. of Senior Personnel  |   |          |  |   |   |  |
| a. ___ (Co)-PD(s) .....   |   |          |  |   |   |  |
| b. ___ Senior Associates .....  |   |          |  |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |  |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |  |   |   |  |
| b. ___ Other Professionals .....  |   |          |  |   |   |  |
| c. ___ Paraprofessionals .....  |   |          |  |   |   |  |
| d. ___ Graduate Students .....  |   |          |  |   |   |  |
| e. ___ Prebaccalaureate Students .....  |   |          |  |   |   |  |
| f. ___ Secretarial-Clerical .....   |   |          |  |   |   |  |
| g. ___ Technical, Shop and Other .....  |   |          |  |   |   |  |
| <b>Total Salaries and Wages</b> .....   |   |          |  | \$0                                     | \$0   | \$0  |
| <b>B. Fringe Benefits</b> (If charged as Direct Costs)  |   |          |  |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....   |   |          |  | \$0                                     | 0   | \$0  |
| <b>D. Nonexpendable Equipment</b> (Attach supporting data. List items and dollar amounts for each item.)  |   |          |  |   |   |  |
| <b>E. Materials and Supplies</b>  |   |          |  | \$7,000                                 |   |  |
| <b>F. Travel</b>  |   |          |  | \$4,000                                 |   |  |
| <b>G. Publication Costs/Page Charges</b>  |   |          |  |   |   |  |
| <b>H. Computer (ADPE) Costs</b>   |   |          |  |   |   |  |
| <b>I. Student Assistance/Support</b> (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)                   |   |          |  |   |   |  |
| <b>J. All Other Direct Costs</b> (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |          |  |   |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....  |   |          |  | \$11,000                                | 0   | \$0  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |  |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....  |   |          |  | \$11,000                                | 0   | \$0  |
| <b>N. Other</b> .....   |   |          |  |   |   |  |
| <b>O. Total Amount of This Request</b> .....  |   |          |  | \$11,000                                | 0   | \$0  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | <b>Federal Funds: \$</b>                   | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |  |   |   |  |
| Cash (both Applicant and Third Party) .....   |   |          | →  |   |   |  |
| Non-Cash Contributions (both Applicant and Third Party) .....   |   |          | →  |   |   |  |
| <b>NAME AND TITLE</b> (Type or print)   | <b>SIGNATURE</b> (required for revised budget only) |          |  |   | <b>DATE</b>   |  |
| <b>Project Director</b>   |   |          |  |   |   |  |
| <b>Authorized Organizational Representative</b>   |   |          |  |   |   |  |
| <b>Signature (for optional use)</b>   |   |          |  |   |   |  |

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Form CSREES-2004 (12/2000)

## BUDGET EXPLANATION FOR PURDUE UNIVERSITY

(Einstein)

### Objective 2

- E. Materials and Supplies.** Annual costs: \$2,000 for software licenses, e.g., Ultraseek Search and Webtrend log analyzer; \$1,500 for hard ware replacement, e.g., hard drives and media.
- F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to visit with LaDon Swann (Mississippi/Alabama Sea Grant) to discuss AquaNIC programming issues.

## PROPOSED ACTIVITIES FOR MICHIGAN STATE UNIVERSITY

(Garling)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Serving as lead liaison between the NCRAC Yellow Perch Work Group and Extension Work Group.
  - b. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
  - c. Leading or assisting in the development of extension publications (fact sheets or bulletins) on knowledge gained from research by the Yellow Perch Work Group.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Michigan to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Michigan.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.
3. Develop and implement aquaculture education programs and materials for the NCR.
  - a. Produce two surveys: state BMPs and regulations.

**BUDGET**

|   |  |   |   |   |   |  |  |
|---|--|---|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Department of Fisheries and Wildlife<br>Michigan State University<br>East Lansing, MI 48824-1222  |  |   | USDA AWARD NO. Year 1: Objectives 1 - 3 |   |   |  |  |
|   |  |   | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: ____          | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Donald L. Garling  |  |   | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |   | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |   | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |   |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |   |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |   |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |   |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |   |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |   |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |   |   |   |   |  |  |
| e. <u>1</u> Prebaccalaureate Students .....   |  |   |   | \$2,000                                 |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |   |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |   |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |   |   | \$2,000                                 |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |   |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |   |   | \$2,000                                 |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |   |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |   |   | \$250                                   |   |  |  |
| <b>F. Travel</b>  |  |   |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |   |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |   |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |   |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |   |   | \$500                                   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |   |   | \$3,250                                 |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |   |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |   |   | \$3,250                                 |   |  |  |
| <b>N. Other</b> ..... →   |  |   |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |   |   | \$3,250                                 |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |  |   | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |  |   |   |   |   |  |  |
| Cash (both Applicant and Third Party) ..... →   |  |   |   |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |  |   |   |   |   |  |  |
| <b>NAME AND TITLE (Type or print)</b>   |  | <b>SIGNATURE (required for revised budget only)</b> |   |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |  |   |   |   |   |  |  |
| <b>Authorized Organizational Representative</b>   |  |   |   |   |   |  |  |
| <b>Signature (for optional use)</b>   |  |   |   |   |   |  |  |

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Form CSREES-2004 (12/2000)

**BUDGET**

|   |  |  |  |  |                                |   |  |
|---|--|--|--|--|--------------------------------|---|--|
| ORGANIZATION AND ADDRESS<br>Department of Fisheries and Wildlife<br>Michigan State University<br>East Lansing, MI 48824-1222  |  |  |  | <b>USDA AWARD NO.</b> Year 2: Objectives 1 - 3 |                                |   |  |
| PROJECT DIRECTOR(S)<br>Donald L. Garling  |  |  |  | Duration Proposed Months: <u>12</u>            | Duration Proposed Months: ____ | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| <b>A. Salaries and Wages</b>  |  |  |  | <b>CSREES FUNDED WORK MONTHS</b>               |                                |   |  |
| 1. No. of Senior Personnel  |  |  |  | Calendar                                       | Academic                       | Summer  |  |
| a. ___ (Co)-PD(s) .....   |  |  |  |  |                                |   |  |
| b. ___ Senior Associates .....  |  |  |  |  |                                |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |  |  |                                |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |  |  |                                |   |  |
| b. ___ Other Professionals .....  |  |  |  |  |                                |   |  |
| c. ___ Paraprofessionals .....  |  |  |  |  |                                |   |  |
| d. ___ Graduate Students .....  |  |  |  |  |                                |   |  |
| e. <u>1</u> Prebaccalaureate Students .....   |  |  |  |  |                                |   | \$1,500  |
| f. ___ Secretarial-Clerical .....   |  |  |  |  |                                |   |  |
| g. ___ Technical, Shop and Other .....  |  |  |  |  |                                |   |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |  |  |                                |   | \$1,500  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |  |  |                                |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |  |  |                                |   | \$1,500  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |  |  |                                |   |  |
| <b>E. Materials and Supplies</b>  |  |  |  |  |                                |   | \$250  |
| <b>F. Travel</b>  |  |  |  |  |                                |   | \$500  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |  |  |                                |   |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |  |  |                                |   |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |  |  |                                |   |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |  |  |                                |   | \$500  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |  |  |                                |   | \$2,750  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |  |  |                                |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |  |  |                                |   | \$2,750  |
| <b>N. Other</b> ..... →   |  |  |  |  |                                |   |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |  |  |                                |   | \$2,750  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE</b> (Type or print)           | <b>SIGNATURE</b> (required for revised budget only) | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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Form CSREES-2004 (12/2000)



**BUDGET**

|   |                           |          |  |   |   |  |
|---|---------------------------|----------|--|---|---|--|
| ORGANIZATION AND ADDRESS<br>Department of Fisheries and Wildlife<br>Michigan State University<br>East Lansing, MI 48824-1222  |                           |          | USDA AWARD NO. Years 1 & 2: Objectives 1 - 3 |   |   |  |
| PROJECT DIRECTOR(S)<br>Donald L. Garling  |                           |          | Duration Proposed Months: <u>24</u>          | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
|   |                           |          | Funds Requested by Proposer                  | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>  | CSREES FUNDED WORK MONTHS |          |  |   |   |  |
|   |                           | Calendar | Academic                                     | Summer                                  |   |  |
| 1. No. of Senior Personnel  |                           |          |  |   |   |  |
| a. ___ (Co)-PD(s) .....   |                           |          |  |   |   |  |
| b. ___ Senior Associates .....  |                           |          |  |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |                           |          |  |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |                           |          |  |   |   |  |
| b. ___ Other Professionals .....  |                           |          |  |   |   |  |
| c. ___ Paraprofessionals .....  |                           |          |  |   |   |  |
| d. ___ Graduate Students .....  |                           |          |  |   |   |  |
| e. <u>1</u> Prebaccalaureate Students .....   |                           |          |  | \$3,500                                 |   |  |
| f. ___ Secretarial-Clerical .....   |                           |          |  |   |   |  |
| g. ___ Technical, Shop and Other .....  |                           |          |  |   |   |  |
| <b>Total Salaries and Wages</b> .....   |                           |          |  | \$3,500                                 |   |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |                           |          |  |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....   |                           |          |  | \$3,500                                 |   |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |                           |          |  |   |   |  |
| <b>E. Materials and Supplies</b>  |                           |          |  | \$500                                   |   |  |
| <b>F. Travel</b>  |                           |          |  | \$1,000                                 |   |  |
| <b>G. Publication Costs/Page Charges</b>  |                           |          |  |   |   |  |
| <b>H. Computer (ADPE) Costs</b>   |                           |          |  |   |   |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |                           |          |  |   |   |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |                           |          |  | \$1,000                                 |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....  |                           |          |  | \$6,000                                 |   |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |                           |          |  |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....  |                           |          |  | \$6,000                                 |   |  |
| <b>N. Other</b> .....   |                           |          |  |   |   |  |
| <b>O. Total Amount of This Request</b> .....  |                           |          |  | \$6,000                                 |   |  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |   |  |
|--|---|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |   |  |
| Cash (both Applicant and Third Party) .....                                  | → |  |
| Non-Cash Contributions (both Applicant and Third Party) .....                | → |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.

## BUDGET EXPLANATION FOR MICHIGAN STATE UNIVERSITY

(Garling)

### Objectives 1 - 3

- A. Salaries and Wages.** Year 1: undergraduate student employee (\$10/hour for 200 hours) to assist with surveys; Year 2: undergraduate student employee (\$10/hour for 150 hours) to assist with surveys.
- E. Supplies and Materials** Annual costs: (\$250) for duplication and associated office supplies such as toner, folders, and paper.
- F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Michigan Aquaculture Association at a destination to be determined by the aquaculture association (\$500).
- J. All Other Direct Costs.** Annual costs: associated with conducting two surveys, i.e., mail (\$300) and telephone (\$200) expenditures.

## PROPOSED ACTIVITIES FOR UNIVERSITY OF MINNESOTA-DULUTH

(Gunderson)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Minnesota to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Minnesota.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |                                  |          |   |   |   |  |
|---|----------------------------------|----------|---|---|---|--|
| ORGANIZATION AND ADDRESS<br>Minnesota Sea Grant Extension Program<br>University of Minnesota-Duluth<br>Duluth, MN 55812   |                                  |          | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |   |  |
|   |                                  |          | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Jeffrey L. Gunderson   |                                  |          | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b> |          |   |   |   |  |
|   |                                  | Calendar | Academic                                | Summer                                  |   |  |
| 1. No. of Senior Personnel  |                                  |          |   |   |   |  |
| a. ___ (Co)-PD(s) .....   |                                  |          |   |   |   |  |
| b. ___ Senior Associates .....  |                                  |          |   |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |                                  |          |   |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |                                  |          |   |   |   |  |
| b. ___ Other Professionals .....  |                                  |          |   |   |   |  |
| c. ___ Paraprofessionals .....  |                                  |          |   |   |   |  |
| d. ___ Graduate Students .....  |                                  |          |   |   |   |  |
| e. ___ Prebaccalaureate Students .....  |                                  |          |   |   |   |  |
| f. ___ Secretarial-Clerical .....   |                                  |          |   |   |   |  |
| g. ___ Technical, Shop and Other .....  |                                  |          |   |   |   |  |
| <b>Total Salaries and Wages</b> .....   |                                  |          |   | \$0                                     |   |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |                                  |          |   |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....   |                                  |          |   |   |   |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |                                  |          |   |   |   |  |
| <b>E. Materials and Supplies</b>  |                                  |          |   |   |   |  |
| <b>F. Travel</b> .....  |                                  |          |   |   |   |  |
| <b>G. Publication Costs/Page Charges</b>  |                                  |          |   |   |   |  |
| <b>H. Computer (ADPE) Costs</b>   |                                  |          |   |   |   |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |                                  |          |   |   |   |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |                                  |          |   |   |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....  |                                  |          |   |   |   |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |                                  |          |   |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....  |                                  |          |   |   |   |  |
| <b>N. Other</b> .....   |                                  |          |   |   |   |  |
| <b>O. Total Amount of This Request</b> .....  |                                  |          |   |   |   |  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |   |  |
|--|---|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |   |  |
| Cash (both Applicant and Third Party) .....                                  | → |  |
| Non-Cash Contributions (both Applicant and Third Party) .....                | → |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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Form CSREES-2004 (12/2000)

UNITED STATES DEPARTMENT OF AGRICULTURE  
 COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |  |  |   |   |   |  |  |
|---|--|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Minnesota Sea Grant Extension Program<br>University of Minnesota-Duluth<br>Duluth, MN 55812   |  |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |  |
|   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Jeffrey L. Gunderson   |  |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |  |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |  |   |   |   |  |  |
| <b>F. Travel</b>  |  |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |  |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   | \$500                                   |   |  |  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |  |  |  |
|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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 Form CSREES-2004 (12/2000)

**BUDGET**

|  |  |  |   |                                    |  |   |
|--|--|--|---|------------------------------------|--|---|
| ORGANIZATION AND ADDRESS<br>Minnesota Sea Grant Extension Program<br>University of Minnesota-Duluth<br>Duluth, MN 55812  |  |  | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |
| PROJECT DIRECTOR(S)<br>Jeffrey L. Gunderson  |  |  | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |  |  | <b>CSREES FUNDED WORK MONTHS</b>                |                                    |  |   |
|  |  |  | Calendar  | Academic                           | Summer   |   |
| a. ___ (Co)-PD(s) .....  |  |  |   |                                    |  |   |
| b. ___ Senior Associates .....   |  |  |   |                                    |  |   |
| 2. No. of Other Personnel (Non-Faculty)<br>a. ___ Research Associates-Postdoctorates . . .   |  |  |   |                                    |  |   |
| b. ___ Other Professionals .....   |  |  |   |                                    |  |   |
| c. ___ Paraprofessionals .....   |  |  |   |                                    |  |   |
| d. ___ Graduate Students .....   |  |  |   |                                    |  |   |
| e. ___ Prebaccalaureate Students .....   |  |  |   |                                    |  |   |
| f. ___ Secretarial-Clerical .....  |  |  |   |                                    |  |   |
| g. ___ Technical, Shop and Other .....   |  |  |   |                                    |  |   |
| <b>Total Salaries and Wages</b> ..... →  |  |  |   |                                    |  | \$0   |
| B. Fringe Benefits (If charged as Direct Costs)  |  |  |   |                                    |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →  |  |  |   |                                    |  | \$0   |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |  |   |                                    |  |   |
| E. Materials and Supplies  |  |  |   |                                    |  |   |
| F. Travel  |  |  |   |                                    |  | \$1,000   |
| G. Publication Costs/Page Charges  |  |  |   |                                    |  |   |
| H. Computer (ADPE) Costs   |  |  |   |                                    |  |   |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |  |   |                                    |  |   |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |  |   |                                    |  |   |
| <b>K. Total Direct Costs (C through I)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                    |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| N. Other .....   |  |  |   |                                    |  |   |
| <b>O. Total Amount of This Request</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| <b>P. Carryover -- (If Applicable)</b> .....   |  |  | Federal Funds: \$                               | Non-Federal funds: \$              | Total \$   |   |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |  |  |   |                                    |  |   |
| Cash (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| Non-Cash Contributions (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| NAME AND TITLE (Type or print)   | SIGNATURE (required for revised budget only) |  |   | DATE                               |  |   |
| Project Director   |  |  |   |                                    |  |   |
| Authorized Organizational Representative   |  |  |   |                                    |  |   |
| Signature (for optional use)   |  |  |   |                                    |  |   |

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**BUDGET EXPLANATION FOR UNIVERSITY OF MINNESOTA-DULUTH**

**(Gunderson)**

**Objectives 1 and 2**

- F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Minnesota Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR NORTH DAKOTA STATE UNIVERSITY

(Hill)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in North Dakota.
  - d. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.



UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |                                  |          |   |   |   |  |
|---|----------------------------------|----------|---|---|---|--|
| ORGANIZATION AND ADDRESS<br>Williston Research/Extension Center<br>North Dakota State University<br>Carrington, ND 58421  |                                  |          | USDA AWARD NO. Year 1: Objectives 1 & 2             |   |   |  |
|   |                                  |          | Duration Proposed Months: <u>12</u>                 | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Chester L. Hill  |                                  |          | Funds Requested by Proposer                         | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b> |          |   |   |   |  |
|   |                                  | Calendar | Academic  | Summer                                  |   |  |
| 1. No. of Senior Personnel  |                                  |          |   |   |   |  |
| a. ___ (Co)-PD(s) .....   |                                  |          |   |   |   |  |
| b. ___ Senior Associates .....  |                                  |          |   |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |                                  |          |   |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |                                  |          |   |   |   |  |
| b. ___ Other Professionals .....  |                                  |          |   |   |   |  |
| c. ___ Paraprofessionals .....  |                                  |          |   |   |   |  |
| d. ___ Graduate Students .....  |                                  |          |   |   |   |  |
| e. ___ Prebaccalaureate Students .....  |                                  |          |   |   |   |  |
| f. ___ Secretarial-Clerical .....   |                                  |          |   |   |   |  |
| g. ___ Technical, Shop and Other .....  |                                  |          |   |   |   |  |
| <b>Total Salaries and Wages</b> .....   |                                  |          |   | \$0                                     |   |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |                                  |          |   |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....   |                                  |          |   |   |   |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |                                  |          |   |   |   |  |
| <b>E. Materials and Supplies</b>  |                                  |          |   |   |   |  |
| <b>F. Travel</b> .....  |                                  |          |   |   |   |  |
| <b>G. Publication Costs/Page Charges</b>  |                                  |          |   |   |   |  |
| <b>H. Computer (ADPE) Costs</b>   |                                  |          |   |   |   |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |                                  |          |   |   |   |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |                                  |          |   |   |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....  |                                  |          |   |   |   |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |                                  |          |   |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....  |                                  |          |   |   |   |  |
| <b>N. Other</b> .....   |                                  |          |   |   |   |  |
| <b>O. Total Amount of This Request</b> .....  |                                  |          |   |   |   |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |                                  |          | <b>Federal Funds: \$</b>                            | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |                                  |          |   |   |   |  |
| Cash (both Applicant and Third Party) .....   |                                  |          |   |   |   |  |
| Non-Cash Contributions (both Applicant and Third Party) .....   |                                  |          |   |   |   |  |
| <b>NAME AND TITLE (Type or print)</b>   |                                  |          | <b>SIGNATURE (required for revised budget only)</b> |   |   | <b>DATE</b>  |
| <b>Project Director</b>   |                                  |          |   |   |   |  |
| <b>Authorized Organizational Representative</b>   |                                  |          |   |   |   |  |
| <b>Signature (for optional use)</b>   |                                  |          |   |   |   |  |

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Form CSREES-2004 (12/2000)

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |   |  |   |                                |   |  |
|---|---|--|---|--------------------------------|---|--|
| ORGANIZATION AND ADDRESS<br>Williston Research/Extension Center<br>North Dakota State University<br>Carrington, ND 58421  |   |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |                                |   |  |
| PROJECT DIRECTOR(S)<br>Chester L. Hill  |   |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: ____ | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| <b>A. Salaries and Wages</b>  |   |  | <b>CSREES FUNDED WORK MONTHS</b>        |                                |   |  |
| 1. No. of Senior Personnel  |   |  | Calendar                                | Academic                       | Summer  |  |
| a. ___ (Co)-PD(s) .....   |   |  |   |                                |   |  |
| b. ___ Senior Associates .....  |   |  |   |                                |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |  |   |                                |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |  |   |                                |   |  |
| b. ___ Other Professionals .....  |   |  |   |                                |   |  |
| c. ___ Paraprofessionals .....  |   |  |   |                                |   |  |
| d. ___ Graduate Students .....  |   |  |   |                                |   |  |
| e. ___ Prebaccalaureate Students .....  |   |  |   |                                |   |  |
| f. ___ Secretarial-Clerical .....   |   |  |   |                                |   |  |
| g. ___ Technical, Shop and Other .....  |   |  |   |                                |   |  |
| <b>Total Salaries and Wages</b> ..... →   |   |  |   |                                |   | \$0  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |  |   |                                |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |  |   |                                |   | \$0  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |  |   |                                |   |  |
| <b>E. Materials and Supplies</b>  |   |  |   |                                |   |  |
| <b>F. Travel</b>  |   |  |   |                                |   | \$500  |
| <b>G. Publication Costs/Page Charges</b>  |   |  |   |                                |   |  |
| <b>H. Computer (ADPE) Costs</b>   |   |  |   |                                |   |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |  |   |                                |   |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |  |   |                                |   |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |  |   |                                |   | \$500  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |                                |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |  |   |                                |   | \$500  |
| <b>N. Other</b> ..... →   |   |  |   |                                |   |  |
| <b>O. Total Amount of This Request</b> ..... →  |   |  |   |                                |   | \$500  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |  | Federal Funds: \$                       | Non-Federal funds: \$          | Total \$  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |  |   |                                |   |  |
| Cash (both Applicant and Third Party) ..... →   |   |  |   |                                |   |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |  |   |                                |   |  |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |  |   |                                | <b>DATE</b>   |  |
| <b>Project Director</b>   |   |  |   |                                |   |  |
| <b>Authorized Organizational Representative</b>   |   |  |   |                                |   |  |
| <b>Signature (for optional use)</b>   |   |  |   |                                |   |  |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.  
Form CSREES-2004 (12/2000)

**BUDGET**

|  |  |  |   |                                    |  |   |
|--|--|--|---|------------------------------------|--|---|
| ORGANIZATION AND ADDRESS<br>Williston Research/Extension Center<br>North Dakota State University<br>Carrington, ND 58421   |  |  | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |
| PROJECT DIRECTOR(S)<br>Chester L. Hill   |  |  | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |  |  | <b>CSREES FUNDED WORK MONTHS</b>                |                                    |  |   |
|  |  |  | Calendar  | Academic                           | Summer   |   |
| a. ___ (Co)-PD(s) .....  |  |  |   |                                    |  |   |
| b. ___ Senior Associates .....   |  |  |   |                                    |  |   |
| 2. No. of Other Personnel (Non-Faculty)<br>a. ___ Research Associates-Postdoctorates . . .   |  |  |   |                                    |  |   |
| b. ___ Other Professionals .....   |  |  |   |                                    |  |   |
| c. ___ Paraprofessionals .....   |  |  |   |                                    |  |   |
| d. ___ Graduate Students .....   |  |  |   |                                    |  |   |
| e. ___ Prebaccalaureate Students .....   |  |  |   |                                    |  |   |
| f. ___ Secretarial-Clerical .....  |  |  |   |                                    |  |   |
| g. ___ Technical, Shop and Other .....   |  |  |   |                                    |  |   |
| <b>Total Salaries and Wages</b> ..... →  |  |  |   |                                    |  | \$0   |
| B. Fringe Benefits (If charged as Direct Costs)  |  |  |   |                                    |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →  |  |  |   |                                    |  | \$0   |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |  |   |                                    |  |   |
| E. Materials and Supplies  |  |  |   |                                    |  |   |
| F. Travel  |  |  |   |                                    |  | \$1,000   |
| G. Publication Costs/Page Charges  |  |  |   |                                    |  |   |
| H. Computer (ADPE) Costs   |  |  |   |                                    |  |   |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |  |   |                                    |  |   |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |  |   |                                    |  |   |
| <b>K. Total Direct Costs (C through I)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                    |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| N. Other .....   |  |  |   |                                    |  |   |
| <b>O. Total Amount of This Request</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| <b>P. Carryover -- (If Applicable)</b> .....   |  |  | Federal Funds: \$                               | Non-Federal funds: \$              | Total \$   |   |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |  |  |   |                                    |  |   |
| Cash (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| Non-Cash Contributions (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| NAME AND TITLE (Type or print)   | SIGNATURE (required for revised budget only) |  |   | DATE                               |  |   |
| Project Director   |  |  |   |                                    |  |   |
| Authorized Organizational Representative   |  |  |   |                                    |  |   |
| Signature (for optional use)   |  |  |   |                                    |  |   |

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**BUDGET EXPLANATION FOR NORTH DAKOTA STATE UNIVERSITY**

**(Hill)**

**Objectives 1 and 2**

**F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the North Dakota Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR MICHIGAN STATE UNIVERSITY

(Kinnunen)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Serving as lead liaison between the NCRAC Salmonid, Walleye, and Economics/Marketing Work Groups and Extension Work Group.
  - b. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
  - c. Attend Annual Great Lakes Fish Disease Control Committee meetings as NCRAC representative.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Michigan to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Michigan.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.
  - f. Compile aquaculture extension information for use by Great Lakes Sea Grant agents and CES personnel.

**BUDGET**

|   |   |          |   |   |  |   |
|---|---|----------|---|---|--|---|
| ORGANIZATION AND ADDRESS<br>Michigan State University - Upper Peninsula<br>702 Chippewa Square<br>Marquette, MI 49855-4811  |   |          | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |  |   |
|   |   |          | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/Matching Funds (If required) | Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Ronald E. Kinnunen   |   |          | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |  |   |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |   |  |   |
|   | Calendar  | Academic | Summer                                  |   |  |   |
| a. ___ (Co)-PD(s) .....   |   |          |   |   |  |   |
| b. ___ Senior Associates .....  |   |          |   |   |  |   |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |   |   |  |   |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |   |   |  |   |
| b. ___ Other Professionals .....  |   |          |   |   |  |   |
| c. ___ Paraprofessionals .....  |   |          |   |   |  |   |
| d. ___ Graduate Students .....  |   |          |   |   |  |   |
| e. ___ Prebaccalaureate Students .....  |   |          |   |   |  |   |
| f. ___ Secretarial-Clerical .....   |   |          |   |   |  |   |
| g. ___ Technical, Shop and Other .....  |   |          |   |   |  |   |
| <b>Total Salaries and Wages</b> ..... →   |   |          |   | \$0                                     |  |   |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |          |   |   |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |          |   | \$0                                     |  |   |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |          |   |   |  |   |
| <b>E. Materials and Supplies</b>  |   |          |   |   |  |   |
| <b>F. Travel</b>  |   |          |   | \$500                                   |  |   |
| <b>G. Publication Costs/Page Charges</b>  |   |          |   |   |  |   |
| <b>H. Computer (ADPE) Costs</b>   |   |          |   |   |  |   |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |          |   |   |  |   |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |          |   |   |  |   |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |          |   | \$500                                   |  |   |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |   |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |          |   | \$500                                   |  |   |
| <b>N. Other</b> ..... →   |   |          |   |   |  |   |
| <b>O. Total Amount of This Request</b> ..... →  |   |          |   | \$500                                   |  |   |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | Federal Funds: \$                       | Non-Federal funds: \$                   | Total \$   |   |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |   |   |  |   |
| Cash (both Applicant and Third Party) ..... →   |   |          |   |   |  |   |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |          |   |   |  |   |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |          |   |   | <b>DATE</b>  |   |
| <b>Project Director</b>   |   |          |   |   |  |   |
| <b>Authorized Organizational Representative</b>   |   |          |   |   |  |   |
| <b>Signature (for optional use)</b>   |   |          |   |   |  |   |

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Form CSREES-2004 (12/2000)

**BUDGET**

|   |   |          |   |   |   |  |
|---|---|----------|---|---|---|--|
| ORGANIZATION AND ADDRESS<br>Michigan State University - Upper Peninsula<br>702 Chippewa Square<br>Marquette, MI 49855-4811  |   |          | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |
|   |   |          | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Ronald E. Kinnunen   |   |          | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |   |   |  |
|   | Calendar  | Academic | Summer                                  |   |   |  |
| 1. No. of Senior Personnel  |   |          |   |   |   |  |
| a. ___ (Co)-PD(s) .....   |   |          |   |   |   |  |
| b. ___ Senior Associates .....  |   |          |   |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |   |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |   |   |   |  |
| b. ___ Other Professionals .....  |   |          |   |   |   |  |
| c. ___ Paraprofessionals .....  |   |          |   |   |   |  |
| d. ___ Graduate Students .....  |   |          |   |   |   |  |
| e. ___ Prebaccalaureate Students .....  |   |          |   |   |   |  |
| f. ___ Secretarial-Clerical .....   |   |          |   |   |   |  |
| g. ___ Technical, Shop and Other .....  |   |          |   |   |   |  |
| <b>Total Salaries and Wages</b> .....   |   |          |   | \$0                                     |   |  |
| <b>B. Fringe Benefits</b> (If charged as Direct Costs)  |   |          |   |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits</b> (A plus B) .....   |   |          |   | \$0                                     |   |  |
| <b>D. Nonexpendable Equipment</b> (Attach supporting data. List items and dollar amounts for each item.)  |   |          |   |   |   |  |
| <b>E. Materials and Supplies</b>  |   |          |   |   |   |  |
| <b>F. Travel</b>  |   |          |   | \$500                                   |   |  |
| <b>G. Publication Costs/Page Charges</b>  |   |          |   |   |   |  |
| <b>H. Computer (ADPE) Costs</b>   |   |          |   |   |   |  |
| <b>I. Student Assistance/Support</b> (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)                   |   |          |   |   |   |  |
| <b>J. All Other Direct Costs</b> (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |          |   |   |   |  |
| <b>K. Total Direct Costs</b> (C through I) .....  |   |          |   | \$500                                   |   |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs</b> (J plus K) .....  |   |          |   | \$500                                   |   |  |
| <b>N. Other</b> .....   |   |          |   |   |   |  |
| <b>O. Total Amount of This Request</b> .....  |   |          |   | \$500                                   |   |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |   |   |   |  |
| Cash (both Applicant and Third Party) .....   |   |          | →                                       |   |   |  |
| Non-Cash Contributions (both Applicant and Third Party) .....   |   |          | →                                       |   |   |  |
| <b>NAME AND TITLE</b> (Type or print)   | <b>SIGNATURE</b> (required for revised budget only) |          |   |   | <b>DATE</b>   |  |
| <b>Project Director</b>   |   |          |   |   |   |  |
| <b>Authorized Organizational Representative</b>   |   |          |   |   |   |  |
| <b>Signature (for optional use)</b>   |   |          |   |   |   |  |

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Form CSREES-2004 (12/2000)

**BUDGET**

|   |   |          |   |                                    |  |   |                                |
|---|---|----------|---|------------------------------------|--|---|--------------------------------|
| ORGANIZATION AND ADDRESS<br>Michigan State University - Upper Peninsula<br>702 Chippewa Square<br>Marquette, MI 49855-4811  |   |          | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |                                |
|   |   |          | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) | Funds Requested<br>by Proposer |
| PROJECT DIRECTOR(S)<br>Ronald E. Kinnunen   |   |          |   |                                    |  |   |                                |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |                                    |  |   |                                |
|   | Calendar  | Academic | Summer  |                                    |  |   |                                |
| a. ___ (Co)-PD(s) .....   |   |          |   |                                    |  |   |                                |
| b. ___ Senior Associates .....  |   |          |   |                                    |  |   |                                |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |   |                                    |  |   |                                |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |   |                                    |  |   |                                |
| b. ___ Other Professionals .....  |   |          |   |                                    |  |   |                                |
| c. ___ Paraprofessionals .....  |   |          |   |                                    |  |   |                                |
| d. ___ Graduate Students .....  |   |          |   |                                    |  |   |                                |
| e. ___ Prebaccalaureate Students .....  |   |          |   |                                    |  |   |                                |
| f. ___ Secretarial-Clerical .....   |   |          |   |                                    |  |   |                                |
| g. ___ Technical, Shop and Other .....  |   |          |   |                                    |  |   |                                |
| <b>Total Salaries and Wages</b> ..... →   |   |          |   | \$0                                |  |   |                                |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |          |   |                                    |  |   |                                |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |          |   | \$0                                |  |   |                                |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |          |   |                                    |  |   |                                |
| <b>E. Materials and Supplies</b>  |   |          |   |                                    |  |   |                                |
| <b>F. Travel</b>  |   |          |   | \$1,000                            |  |   |                                |
| <b>G. Publication Costs/Page Charges</b>  |   |          |   |                                    |  |   |                                |
| <b>H. Computer (ADPE) Costs</b>   |   |          |   |                                    |  |   |                                |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |          |   |                                    |  |   |                                |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |          |   |                                    |  |   |                                |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |          |   | \$1,000                            |  |   |                                |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |                                    |  |   |                                |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |          |   | \$1,000                            |  |   |                                |
| <b>N. Other</b> ..... →   |   |          |   |                                    |  |   |                                |
| <b>O. Total Amount of This Request</b> ..... →  |   |          |   | \$1,000                            |  |   |                                |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | Federal Funds: \$                               | Non-Federal funds: \$              | Total \$   |   |                                |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |   |                                    |  |   |                                |
| Cash (both Applicant and Third Party) ..... →   |   |          |   |                                    |  |   |                                |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |          |   |                                    |  |   |                                |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |          |   |                                    |  | <b>DATE</b>   |                                |
| <b>Project Director</b>   |   |          |   |                                    |  |   |                                |
| <b>Authorized Organizational Representative</b>   |   |          |   |                                    |  |   |                                |
| <b>Signature (for optional use)</b>   |   |          |   |                                    |  |   |                                |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.



**BUDGET EXPLANATION FOR MICHIGAN STATE UNIVERSITY**

**(Kinnunen)**

**Objectives 1 and 2**

**F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Michigan Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR KANSAS STATE UNIVERSITY

(Lee)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Kansas.
  - d. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

**BUDGET**

|   |   |  |   |   |   |  |  |
|---|---|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Department of Animal Science and Industry<br>Kansas State University<br>Manhattan, KS 66506-1600  |   |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |   |  |  |
|   |   |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Charles D. Lee   |   |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |   |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |   |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |   |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |   |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |   |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |   |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |   |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |   |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |   |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |   |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |   |  |   |   |   |  |  |
| <b>F. Travel</b>  |   |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |   |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |   |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |   |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |  | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |  |   |   |   |  |  |
| Cash (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |  |   |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |   |  |   |   |   |  |  |
| <b>Authorized Organizational Representative</b>   |   |  |   |   |   |  |  |
| <b>Signature (for optional use)</b>   |   |  |   |   |   |  |  |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.  
Form CSREES-2004 (12/2000)

**BUDGET**

|   |  |  |   |   |   |  |  |
|---|--|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Department of Animal Science and Industry<br>Kansas State University<br>Manhattan, KS 66506-1600  |  |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |  |
|   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Charles D. Lee   |  |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |  |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |  |   |   |   |  |  |
| <b>F. Travel</b>  |  |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |  |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   | \$500                                   |   |  |  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |  |  |  |
|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.

**BUDGET**

|   |  |   |   |  |   |  |  |
|---|--|---|---|--|---|--|--|
| ORGANIZATION AND ADDRESS<br>Department of Animal Science and Industry<br>Kansas State University<br>Manhattan, KS 66506-1600  |  |   | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |  |   |  |  |
|   |  |   | Duration Proposed Months: <u>24</u>             | Duration Proposed Months: _____                | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Charles D. Lee   |  |   | <b>Funds Requested by Proposer</b>              | <b>Funds Approved by CSREES (If different)</b> |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |   | <b>CSREES FUNDED WORK MONTHS</b>                |  |   |  |  |
|   |  |   | Calendar  | Academic                                       | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |   |   |  |   |  |  |
| b. ___ Senior Associates .....  |  |   |   |  |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |   |   |  |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |   |   |  |   |  |  |
| b. ___ Other Professionals . . . . .  |  |   |   |  |   |  |  |
| c. ___ Paraprofessionals . . . . .  |  |   |   |  |   |  |  |
| d. ___ Graduate Students . . . . .  |  |   |   |  |   |  |  |
| e. ___ Prebaccalaureate Students . . . . .  |  |   |   |  |   |  |  |
| f. ___ Secretarial-Clerical . . . . .   |  |   |   |  |   |  |  |
| g. ___ Technical, Shop and Other . . . . .  |  |   |   |  |   |  |  |
| <b>Total Salaries and Wages</b> . . . . . →   |  |   |   | \$0  |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |   |   |  |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> . . . . . →   |  |   |   | \$0  |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |   |   |  |   |  |  |
| <b>E. Materials and Supplies</b>  |  |   |   |  |   |  |  |
| <b>F. Travel</b>  |  |   |   | \$1,000  |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |   |   |  |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |   |   |  |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |   |   |  |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |   |   |  |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> . . . . . →  |  |   |   | \$1,000  |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |   |   |  |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> . . . . . →  |  |   |   | \$1,000  |   |  |  |
| <b>N. Other</b> . . . . . →   |  |   |   |  |   |  |  |
| <b>O. Total Amount of This Request</b> . . . . . →  |  |   |   | \$1,000  |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> . . . . .  |  |   | Federal Funds: \$                               | Non-Federal funds: \$                          | Total \$  |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |  |   |   |  |   |  |  |
| Cash (both Applicant and Third Party) . . . . . →   |  |   |   |  |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) . . . . . →   |  |   |   |  |   |  |  |
| <b>NAME AND TITLE</b> (Type or print)   |  | <b>SIGNATURE</b> (required for revised budget only) |   |  | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |  |   |   |  |   |  |  |
| <b>Authorized Organizational Representative</b>   |  |   |   |  |   |  |  |
| <b>Signature (for optional use)</b>   |  |   |   |  |   |  |  |

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## BUDGET EXPLANATION FOR KANSAS STATE UNIVERSITY

(Lee)

### Objectives 1 and 2

- F. **Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Kansas Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR PURDUE UNIVERSITY

(Miller)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Minnesota to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Minnesota.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

**BUDGET**

|   |   |  |   |   |   |  |  |
|---|---|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Purdue Research Foundation<br>Office of Sponsored Programs<br>West Lafayette, IN 47907-1021   |   |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |   |  |  |
|   |   |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: ____          | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Brian K. Miller  |   |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |   |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |   |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |   |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |   |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |   |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |   |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |   |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |   |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |   |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |   |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |   |  |   |   |   |  |  |
| <b>F. Travel</b>  |   |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |   |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |   |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |   |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |  | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |  |   |   |   |  |  |
| Cash (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |  |   |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |   |  |   |   |   |  |  |
| <b>Authorized Organizational Representative</b>   |   |  |   |   |   |  |  |
| <b>Signature (for optional use)</b>   |   |  |   |   |   |  |  |

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Form CSREES-2004 (12/2000)



UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |  |   |   |   |   |  |  |
|---|--|---|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Purdue Research Foundation<br>Office of Sponsored Programs<br>West Lafayette, IN 47907-1021   |  |   | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |  |
|   |  |   | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Brian K. Miller  |  |   | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |   | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |   | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |   |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |   |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |   |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |   |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |   |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |   |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |   |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |  |   |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |   |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |   |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |   |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |   |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |   |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |   |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |   |   |   |   |  |  |
| <b>F. Travel</b>  |  |   |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |   |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |   |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |   |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |   |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |   |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |   |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |   |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |  |   |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |   |   | \$500                                   |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |  |   | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |  |   |   |   |   |  |  |
| Cash (both Applicant and Third Party) ..... →   |  |   |   |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |  |   |   |   |   |  |  |
| <b>NAME AND TITLE (Type or print)</b>   |  | <b>SIGNATURE (required for revised budget only)</b> |   |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |  |   |   |   |   |  |  |
| <b>Authorized Organizational Representative</b>   |  |   |   |   |   |  |  |
| <b>Signature (for optional use)</b>   |  |   |   |   |   |  |  |

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Form CSREES-2004 (12/2000)

**BUDGET**

|  |  |  |   |                                    |  |   |
|--|--|--|---|------------------------------------|--|---|
| ORGANIZATION AND ADDRESS<br>Purdue Research Foundation<br>Office of Sponsored Programs<br>West Lafayette, IN 47907-1021  |  |  | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |
| PROJECT DIRECTOR(S)<br>Brian K. Miller   |  |  | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |  |  | <b>CSREES FUNDED WORK MONTHS</b>                |                                    |  |   |
|  |  |  | Calendar  | Academic                           | Summer   |   |
| a. ___ (Co)-PD(s) .....  |  |  |   |                                    |  |   |
| b. ___ Senior Associates .....   |  |  |   |                                    |  |   |
| 2. No. of Other Personnel (Non-Faculty)<br>a. ___ Research Associates-Postdoctorates . . .   |  |  |   |                                    |  |   |
| b. ___ Other Professionals .....   |  |  |   |                                    |  |   |
| c. ___ Paraprofessionals .....   |  |  |   |                                    |  |   |
| d. ___ Graduate Students .....   |  |  |   |                                    |  |   |
| e. ___ Prebaccalaureate Students .....   |  |  |   |                                    |  |   |
| f. ___ Secretarial-Clerical .....  |  |  |   |                                    |  |   |
| g. ___ Technical, Shop and Other .....   |  |  |   |                                    |  |   |
| <b>Total Salaries and Wages</b> ..... →  |  |  |   |                                    |  | \$0   |
| B. Fringe Benefits (If charged as Direct Costs)  |  |  |   |                                    |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →  |  |  |   |                                    |  | \$0   |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |  |   |                                    |  |   |
| E. Materials and Supplies  |  |  |   |                                    |  |   |
| F. Travel  |  |  |   |                                    |  | \$1,000   |
| G. Publication Costs/Page Charges  |  |  |   |                                    |  |   |
| H. Computer (ADPE) Costs   |  |  |   |                                    |  |   |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |  |   |                                    |  |   |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |  |   |                                    |  |   |
| <b>K. Total Direct Costs (C through I)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                    |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| N. Other .....   |  |  |   |                                    |  |   |
| <b>O. Total Amount of This Request</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| <b>P. Carryover -- (If Applicable)</b> .....   |  |  | Federal Funds: \$                               | Non-Federal funds: \$              | Total \$   |   |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |  |  |   |                                    |  |   |
| Cash (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| Non-Cash Contributions (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| NAME AND TITLE (Type or print)   | SIGNATURE (required for revised budget only) |  |   | DATE                               |  |   |
| Project Director   |  |  |   |                                    |  |   |
| Authorized Organizational Representative   |  |  |   |                                    |  |   |
| Signature (for optional use)   |  |  |   |                                    |  |   |

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## BUDGET EXPLANATION FOR PURDUE UNIVERSITY

(Miller)

### Objectives 1 and 2

- F. **Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Indiana Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR SOUTH DAKOTA STATE UNIVERSITY

(Mills)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Minnesota to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Minnesota.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

**BUDGET**

|   |  |  |   |                                 |  |   |
|---|--|--|---|---------------------------------|--|---|
| ORGANIZATION AND ADDRESS<br>South Dakota State University<br>Grants Administration<br>P.O. Box 2201, Brookings, SD 57007  |  |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |                                 |  |   |
|   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____ | Non-Federal Proposed Cost-Sharing/Matching Funds (If required) | Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Jerry B. Mills   |  |  |   |                                 |  |   |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |                                 |  |   |
|   |  |  | Calendar                                | Academic                        | Summer   |   |
| a. ___ (Co)-PD(s) .....   |  |  |   |                                 |  |   |
| b. ___ Senior Associates .....  |  |  |   |                                 |  |   |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |                                 |  |   |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |   |                                 |  |   |
| b. ___ Other Professionals .....  |  |  |   |                                 |  |   |
| c. ___ Paraprofessionals .....  |  |  |   |                                 |  |   |
| d. ___ Graduate Students .....  |  |  |   |                                 |  |   |
| e. ___ Prebaccalaureate Students .....  |  |  |   |                                 |  |   |
| f. ___ Secretarial-Clerical .....   |  |  |   |                                 |  |   |
| g. ___ Technical, Shop and Other .....  |  |  |   |                                 |  |   |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   |                                 | \$0  |   |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |                                 |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   |                                 |  | \$0   |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |                                 |  |   |
| <b>E. Materials and Supplies</b>  |  |  |   |                                 |  |   |
| <b>F. Travel</b>  |  |  |   |                                 |  | \$500   |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |                                 |  |   |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |                                 |  |   |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |                                 |  |   |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |                                 |  |   |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   |                                 |  | \$500   |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                 |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   |                                 |  | \$500   |
| <b>N. Other</b> ..... →   |  |  |   |                                 |  |   |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   |                                 |  | \$500   |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |  |  |
|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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Form CSREES-2004 (12/2000)

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|  |   |          |   |   |   |  |
|--|---|----------|---|---|---|--|
| ORGANIZATION AND ADDRESS<br>South Dakota State University<br>Grants Administration<br>P.O. Box 2201, Brookings, SD 57007   |   |          | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |
|  |   |          | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Jerry B. Mills  |   |          | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>   | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |   |   |  |
|  |   | Calendar | Academic                                | Summer                                  |   |  |
| 1. No. of Senior Personnel   |   |          |   |   |   |  |
| a. ___ (Co)-PD(s) .....  |   |          |   |   |   |  |
| b. ___ Senior Associates .....   |   |          |   |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)  |   |          |   |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .  |   |          |   |   |   |  |
| b. ___ Other Professionals .....   |   |          |   |   |   |  |
| c. ___ Paraprofessionals .....   |   |          |   |   |   |  |
| d. ___ Graduate Students .....   |   |          |   |   |   |  |
| e. ___ Prebaccalaureate Students .....   |   |          |   |   |   |  |
| f. ___ Secretarial-Clerical .....  |   |          |   |   |   |  |
| g. ___ Technical, Shop and Other .....   |   |          |   |   |   |  |
| <b>Total Salaries and Wages</b> .....  |   |          |   | \$0                                     |   |  |
| B. Fringe Benefits (If charged as Direct Costs)  |   |          |   |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....  |   |          |   | \$0                                     |   |  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |   |          |   |   |   |  |
| E. Materials and Supplies  |   |          |   |   |   |  |
| F. Travel  |   |          |   | \$500                                   |   |  |
| G. Publication Costs/Page Charges  |   |          |   |   |   |  |
| H. Computer (ADPE) Costs   |   |          |   |   |   |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |   |          |   |   |   |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |          |   |   |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....   |   |          |   | \$500                                   |   |  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....   |   |          |   | \$500                                   |   |  |
| N. Other .....   |   |          |   |   |   |  |
| <b>O. Total Amount of This Request</b> .....   |   |          |   | \$500                                   |   |  |
| <b>P. Carryover -- (If Applicable)</b> .....   |   |          | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |   |          |   |   |   |  |
| Cash (both Applicant and Third Party) .....  |   |          |   |   |   |  |
| Non-Cash Contributions (both Applicant and Third Party) .....  |   |          |   |   |   |  |
| <b>NAME AND TITLE</b> (Type or print)  | <b>SIGNATURE</b> (required for revised budget only) |          |   |   | <b>DATE</b>   |  |
| <b>Project Director</b>  |   |          |   |   |   |  |
| <b>Authorized Organizational Representative</b>  |   |          |   |   |   |  |
| <b>Signature (for optional use)</b>  |   |          |   |   |   |  |

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Form CSREES-2004 (12/2000)

**BUDGET**

|  |  |  |   |                                    |  |   |
|--|--|--|---|------------------------------------|--|---|
| ORGANIZATION AND ADDRESS<br>South Dakota State University<br>Grants Administration<br>P.O. Box 2201, Brookings, SD 57007   |  |  | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |
| PROJECT DIRECTOR(S)<br>Jerry B. Mills  |  |  | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |  |  | <b>CSREES FUNDED WORK MONTHS</b>                |                                    |  |   |
|  |  |  | Calendar  | Academic                           | Summer   |   |
| a. ___ (Co)-PD(s) .....  |  |  |   |                                    |  |   |
| b. ___ Senior Associates .....   |  |  |   |                                    |  |   |
| 2. No. of Other Personnel (Non-Faculty)<br>a. ___ Research Associates-Postdoctorates . . .   |  |  |   |                                    |  |   |
| b. ___ Other Professionals .....   |  |  |   |                                    |  |   |
| c. ___ Paraprofessionals .....   |  |  |   |                                    |  |   |
| d. ___ Graduate Students .....   |  |  |   |                                    |  |   |
| e. ___ Prebaccalaureate Students .....   |  |  |   |                                    |  |   |
| f. ___ Secretarial-Clerical .....  |  |  |   |                                    |  |   |
| g. ___ Technical, Shop and Other .....   |  |  |   |                                    |  |   |
| <b>Total Salaries and Wages</b> ..... →  |  |  |   |                                    |  | \$0   |
| B. Fringe Benefits (If charged as Direct Costs)  |  |  |   |                                    |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →  |  |  |   |                                    |  | \$0   |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |  |   |                                    |  |   |
| E. Materials and Supplies  |  |  |   |                                    |  |   |
| F. Travel  |  |  |   |                                    |  | \$1,000   |
| G. Publication Costs/Page Charges  |  |  |   |                                    |  |   |
| H. Computer (ADPE) Costs   |  |  |   |                                    |  |   |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |  |   |                                    |  |   |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |  |   |                                    |  |   |
| <b>K. Total Direct Costs (C through I)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                    |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| N. Other .....   |  |  |   |                                    |  |   |
| <b>O. Total Amount of This Request</b> ..... →   |  |  |   |                                    |  | \$1,000   |
| <b>P. Carryover -- (If Applicable)</b> .....   |  |  | Federal Funds: \$                               | Non-Federal funds: \$              | Total \$   |   |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |  |  |   |                                    |  |   |
| Cash (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| Non-Cash Contributions (both Applicant and Third Party) .....  |  |  |   |                                    |  |   |
| NAME AND TITLE (Type or print)   | SIGNATURE (required for revised budget only) |  |   | DATE                               |  |   |
| Project Director   |  |  |   |                                    |  |   |
| Authorized Organizational Representative   |  |  |   |                                    |  |   |
| Signature (for optional use)   |  |  |   |                                    |  |   |

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Form CSREES-2004 (12/2000)

**BUDGET EXPLANATION FOR SOUTH DAKOTA STATE UNIVERSITY**

**(Mills)**

**Objectives 1 and 2**

- F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the South Dakota Aquaculture Association at a destination to be determined by the aquaculture association (\$500).



## PROPOSED ACTIVITIES FOR IOWA STATE UNIVERSITY

(Morris)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Serving as lead liaison between the NCRAC Sunfish and Hybrid Striped Bass Work Groups and Extension Work Group.
  - b. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
  - c. Leading or assisting in the development of extension publications (fact sheets or bulletins) on knowledge gained from research by the Sunfish, Hybrid Striped Bass, and Walleye Work Groups.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Iowa for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Iowa.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.
  - f. AquaNIC and NCRAC Web Site support furnished to Purdue.

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |  |  |   |   |   |  |  |
|---|--|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Department of Natural Resources Ecology and Management<br>Iowa State University<br>Ames, IA 50011-3221  |  |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |   |  |  |
|   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Joseph E. Morris   |  |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |  |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |  |   |   |   |  |  |
| <b>F. Travel</b>  |  |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |  |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   | \$500                                   |   |  |  |

|  |  |                   |                       |          |
|--|--|-------------------|-----------------------|----------|
| <b>P. Carryover -- (If Applicable)</b> ..... |  | Federal Funds: \$ | Non-Federal funds: \$ | Total \$ |
|--|--|-------------------|-----------------------|----------|

|  |  |  |  |
|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.  
Form CSREES-2004 (12/2000)

**BUDGET**

|   |  |  |  |   |                                 |   |  |                             |   |  |
|---|--|--|--|---|---------------------------------|---|--|-----------------------------|---|--|
| ORGANIZATION AND ADDRESS<br>Department of Natural Resources Ecology and Management<br>Iowa State University<br>Ames, IA 50011-3221  |  |  |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |                                 |   |  |                             |   |  |
|   |  |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____ | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) | Funds Requested by Proposer | Funds Approved by CSREES (If different) |  |
| PROJECT DIRECTOR(S)<br>Joseph E. Morris   |  |  |  |   |                                 |   |  |                             |   |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |                                 |   |  |                             |   |  |
|   |  |  |  | Calendar                                | Academic                        | Summer  |  |                             |   |  |
| a. ___ (Co)-PD(s) .....   |  |  |  |   |                                 |   |  |                             |   |  |
| b. ___ Senior Associates .....  |  |  |  |   |                                 |   |  |                             |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |  |   |                                 |   |  |                             |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |  |   |                                 |   |  |                             |   |  |
| b. ___ Other Professionals .....  |  |  |  |   |                                 |   |  |                             |   |  |
| c. ___ Paraprofessionals .....  |  |  |  |   |                                 |   |  |                             |   |  |
| d. ___ Graduate Students .....  |  |  |  |   |                                 |   |  |                             |   |  |
| e. ___ Prebaccalaureate Students .....  |  |  |  |   |                                 |   |  |                             |   |  |
| f. ___ Secretarial-Clerical .....   |  |  |  |   |                                 |   |  |                             |   |  |
| g. ___ Technical, Shop and Other .....  |  |  |  |   |                                 |   |  |                             |   |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |  |   |                                 |   |  | \$0                         |   |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |  |   |                                 |   |  |                             |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |  |   |                                 |   |  | \$0                         |   |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |  |   |                                 |   |  |                             |   |  |
| <b>E. Materials and Supplies</b>  |  |  |  |   |                                 |   |  |                             |   |  |
| <b>F. Travel</b>  |  |  |  |   |                                 |   |  | \$500                       |   |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |  |   |                                 |   |  |                             |   |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |  |   |                                 |   |  |                             |   |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |  |   |                                 |   |  |                             |   |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |  |   |                                 |   |  |                             |   |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |  |   |                                 |   |  | \$500                       |   |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |  |   |                                 |   |  |                             |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |  |   |                                 |   |  | \$500                       |   |  |
| <b>N. Other</b> ..... →   |  |  |  |   |                                 |   |  |                             |   |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |  |   |                                 |   |  | \$500                       |   |  |

|  |  |                          |                              |                 |
|--|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... |  | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--|--------------------------|------------------------------|-----------------|

|  |  |  |  |
|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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 Form CSREES-2004 (12/2000)

**BUDGET**

|  |   |  |   |                                    |  |   |                 |
|--|---|--|---|------------------------------------|--|---|-----------------|
| ORGANIZATION AND ADDRESS<br>Department of Natural Resources Ecology and Management<br>Iowa State University<br>Ames, IA 50011-3221                                       |   |  | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |                                    |  |   |                 |
| PROJECT DIRECTOR(S)<br>Joseph E. Morris  |   |  | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____ | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |                 |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel   |   |  | <b>CSREES FUNDED WORK MONTHS</b>                |                                    |  |   |                 |
|  |   |  | Calendar  | Academic                           | Summer   |   |                 |
| a. ___ (Co)-PD(s) .....  |   |  |   |                                    |  |   |                 |
| b. ___ Senior Associates .....   |   |  |   |                                    |  |   |                 |
| 2. No. of Other Personnel (Non-Faculty)<br>a. ___ Research Associates-Postdoctorates . . .   |   |  |   |                                    |  |   |                 |
| b. ___ Other Professionals .....   |   |  |   |                                    |  |   |                 |
| c. ___ Paraprofessionals .....   |   |  |   |                                    |  |   |                 |
| d. ___ Graduate Students .....   |   |  |   |                                    |  |   |                 |
| e. ___ Prebaccalaureate Students .....   |   |  |   |                                    |  |   |                 |
| f. ___ Secretarial-Clerical .....  |   |  |   |                                    |  |   |                 |
| g. ___ Technical, Shop and Other .....   |   |  |   |                                    |  |   |                 |
| <b>Total Salaries and Wages</b> ..... →  |   |  |   |                                    |  | \$0   |                 |
| B. Fringe Benefits (If charged as Direct Costs)  |   |  |   |                                    |  |   |                 |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →  |   |  |   |                                    |  | \$0   |                 |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |   |  |   |                                    |  |   |                 |
| E. Materials and Supplies  |   |  |   |                                    |  |   |                 |
| F. Travel  |   |  |   |                                    |  | \$1,000   |                 |
| G. Publication Costs/Page Charges  |   |  |   |                                    |  |   |                 |
| H. Computer (ADPE) Costs   |   |  |   |                                    |  |   |                 |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |   |  |   |                                    |  |   |                 |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |  |   |                                    |  |   |                 |
| <b>K. Total Direct Costs (C through I)</b> ..... →   |   |  |   |                                    |  | \$1,000   |                 |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |                                    |  |   |                 |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →   |   |  |   |                                    |  | \$1,000   |                 |
| N. Other .....   |   |  |   |                                    |  |   |                 |
| <b>O. Total Amount of This Request</b> ..... →   |   |  |   |                                    |  | \$1,000   |                 |
| <b>P. Carryover -- (If Applicable)</b> .....   |   |  | <b>Federal Funds: \$</b>                        |                                    | <b>Non-Federal funds: \$</b>   |   | <b>Total \$</b> |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>   |   |  |   |                                    |  |   |                 |
| Cash (both Applicant and Third Party) .....  |   |  |   |                                    |  |   |                 |
| Non-Cash Contributions (both Applicant and Third Party) .....  |   |  |   |                                    |  |   |                 |
| <b>NAME AND TITLE</b> (Type or print)  | <b>SIGNATURE</b> (required for revised budget only) |  |   |                                    | <b>DATE</b>  |   |                 |
| <b>Project Director</b>  |   |  |   |                                    |  |   |                 |
| <b>Authorized Organizational Representative</b>  |   |  |   |                                    |  |   |                 |
| <b>Signature (for optional use)</b>  |   |  |   |                                    |  |   |                 |

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**BUDGET EXPLANATION FOR IOWA STATE UNIVERSITY**

**(Morris)**

**Objectives 1 and 2**

**F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Iowa Aquaculture Association at a destination to be determined by the aquaculture association (\$500)

## PROPOSED ACTIVITIES FOR UNIVERSITY OF MISSOURI-COLUMBIA

(Pierce)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Missouri to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Missouri.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

**BUDGET**

|   |   |  |   |   |   |  |  |
|---|---|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>School of Natural Resources<br>University of Missouri-Columbia<br>Columbia, MO 65211  |   |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |   |  |  |
|   |   |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Robert A. Pierce II  |   |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |   |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |   |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |   |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |   |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |   |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |   |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |   |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |   |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |   |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |   |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |   |  |   |   |   |  |  |
| <b>F. Travel</b>  |   |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |   |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |   |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |   |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |  | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |  |   |   |   |  |  |
| Cash (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |  |   |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |   |  |   |   |   |  |  |
| <b>Authorized Organizational Representative</b>   |   |  |   |   |   |  |  |
| <b>Signature (for optional use)</b>   |   |  |   |   |   |  |  |

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 Form CSREES-2004 (12/2000)

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|  |                                  |          |   |   |   |  |
|--|----------------------------------|----------|---|---|---|--|
| ORGANIZATION AND ADDRESS<br>School of Natural Resources<br>University of Missouri-Columbia<br>Columbia, MO 65211   |                                  |          | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |
|  |                                  |          | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Robert A. Pierce II   |                                  |          | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>   | <b>CSREES FUNDED WORK MONTHS</b> |          |   |   |   |  |
|  |                                  | Calendar | Academic                                | Summer                                  |   |  |
| 1. No. of Senior Personnel   |                                  |          |   |   |   |  |
| a. ___ (Co)-PD(s) .....  |                                  |          |   |   |   |  |
| b. ___ Senior Associates .....   |                                  |          |   |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)  |                                  |          |   |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .  |                                  |          |   |   |   |  |
| b. ___ Other Professionals .....   |                                  |          |   |   |   |  |
| c. ___ Paraprofessionals .....   |                                  |          |   |   |   |  |
| d. ___ Graduate Students .....   |                                  |          |   |   |   |  |
| e. ___ Prebaccalaureate Students .....   |                                  |          |   |   |   |  |
| f. ___ Secretarial-Clerical .....  |                                  |          |   |   |   |  |
| g. ___ Technical, Shop and Other .....   |                                  |          |   |   |   |  |
| <b>Total Salaries and Wages</b> .....  |                                  |          |   | \$0                                     |   |  |
| B. Fringe Benefits (If charged as Direct Costs)  |                                  |          |   |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....  |                                  |          |   | \$0                                     |   |  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |                                  |          |   |   |   |  |
| E. Materials and Supplies  |                                  |          |   |   |   |  |
| F. Travel  |                                  |          |   | \$500                                   |   |  |
| G. Publication Costs/Page Charges  |                                  |          |   |   |   |  |
| H. Computer (ADPE) Costs   |                                  |          |   |   |   |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |                                  |          |   |   |   |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |                                  |          |   |   |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....   |                                  |          |   | \$500                                   |   |  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |                                  |          |   |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....   |                                  |          |   | \$500                                   |   |  |
| N. Other .....   |                                  |          |   |   |   |  |
| <b>O. Total Amount of This Request</b> .....   |                                  |          |   | \$500                                   |   |  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |   |  |  |
|--|---|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |   |  |  |
| Cash (both Applicant and Third Party) .....                                  | → |  |  |
| Non-Cash Contributions (both Applicant and Third Party) .....                | → |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE</b> (Type or print)           | <b>SIGNATURE</b> (required for revised budget only) | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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Form CSREES-2004 (12/2000)



**BUDGET**

|   |   |          |   |   |  |   |
|---|---|----------|---|---|--|---|
| ORGANIZATION AND ADDRESS<br>School of Natural Resources<br>University of Missouri-Columbia<br>Columbia, MO 65211  |   |          | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |   |  |   |
|   |   |          | Duration Proposed<br>Months: <u>24</u>          | Duration Proposed<br>Months: _____            | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) |
| PROJECT DIRECTOR(S)<br>Robert A. Pierce II  |   |          | Funds Requested<br>by Proposer                  | Funds Approved<br>by CSREES<br>(If different) |  |   |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |   |  |   |
|   |   | Calendar | Academic  | Summer  |  |   |
| 1. No. of Senior Personnel  |   |          |   |   |  |   |
| a. ___ (Co)-PD(s) .....   |   |          |   |   |  |   |
| b. ___ Senior Associates .....  |   |          |   |   |  |   |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |   |   |  |   |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |   |   |  |   |
| b. ___ Other Professionals .....  |   |          |   |   |  |   |
| c. ___ Paraprofessionals .....  |   |          |   |   |  |   |
| d. ___ Graduate Students .....  |   |          |   |   |  |   |
| e. ___ Prebaccalaureate Students .....  |   |          |   |   |  |   |
| f. ___ Secretarial-Clerical .....   |   |          |   |   |  |   |
| g. ___ Technical, Shop and Other .....  |   |          |   |   |  |   |
| <b>Total Salaries and Wages</b> .....   |   |          |   | \$0   |  |   |
| <b>B. Fringe Benefits</b> (If charged as Direct Costs)  |   |          |   |   |  |   |
| <b>C. Total Salaries, Wages, and Fringe Benefits</b> (A plus B) .....   |   |          |   | \$0   |  |   |
| <b>D. Nonexpendable Equipment</b> (Attach supporting data. List items and dollar amounts for each item.)  |   |          |   |   |  |   |
| <b>E. Materials and Supplies</b>  |   |          |   |   |  |   |
| <b>F. Travel</b>  |   |          |   | \$1,000                                       |  |   |
| <b>G. Publication Costs/Page Charges</b>  |   |          |   |   |  |   |
| <b>H. Computer (ADPE) Costs</b>   |   |          |   |   |  |   |
| <b>I. Student Assistance/Support</b> (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)                   |   |          |   |   |  |   |
| <b>J. All Other Direct Costs</b> (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |          |   |   |  |   |
| <b>K. Total Direct Costs</b> (C through I) .....  |   |          |   | \$1,000                                       |  |   |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |   |  |   |
| <b>M. Total Direct and F&amp;A/Indirect Costs</b> (J plus K) .....  |   |          |   | \$1,000                                       |  |   |
| <b>N. Other</b> .....   |   |          |   |   |  |   |
| <b>O. Total Amount of This Request</b> .....  |   |          |   | \$1,000                                       |  |   |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | <b>Federal Funds: \$</b>                        | <b>Non-Federal funds: \$</b>                  | <b>Total \$</b>  |   |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |   |   |  |   |
| Cash (both Applicant and Third Party) .....   |   |          | →   |   |  |   |
| Non-Cash Contributions (both Applicant and Third Party) .....   |   |          | →   |   |  |   |
| <b>NAME AND TITLE</b> (Type or print)   | <b>SIGNATURE</b> (required for revised budget only) |          |   |   | <b>DATE</b>  |   |
| <b>Project Director</b>   |   |          |   |   |  |   |
| <b>Authorized Organizational Representative</b>   |   |          |   |   |  |   |
| <b>Signature (for optional use)</b>   |   |          |   |   |  |   |

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Form CSREES-2004 (12/2000)

**BUDGET EXPLANATION FOR UNIVERSITY OF MISSOURI-COLUMBIA**

**(Pierce)**

**Objectives 1 and 2**

**F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Missouri Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR UNIVERSITY OF ILLINOIS

(Plumer)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Attending one additional state aquaculture meeting in the region to interact with other state extension personnel as well as aquaculture industry representatives.
  - c. Providing 15 copies of aquaculture extension related materials produced in Minnesota to the extension chairperson for distribution to all state contacts once annually.
  - d. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Minnesota.
  - e. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.

**BUDGET**

|   |  |  |   |   |   |  |  |
|---|--|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>University of Illinois Extension<br>4202 Williamson Place, Suite 2<br>Mt. Vernon, Illinois 62864  |  |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |   |   |  |  |
|   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Michael D. Plumer  |  |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |  |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |  |   |   |   |  |  |
| <b>F. Travel</b>  |  |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |  |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   | \$500                                   |   |  |  |

|  |                   |                       |          |
|--|-------------------|-----------------------|----------|
| <b>P. Carryover -- (If Applicable)</b> ..... | Federal Funds: \$ | Non-Federal funds: \$ | Total \$ |
|--|-------------------|-----------------------|----------|

|  |  |  |  |
|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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 Form CSREES-2004 (12/2000)

**BUDGET**

|   |  |  |   |   |   |  |  |
|---|--|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>University of Illinois Extension<br>4202 Williamson Place, Suite 2<br>Mt. Vernon, Illinois 62864  |  |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |  |
|   |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Michael D. Plumer  |  |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |  |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |  |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |  |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |  |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |  |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |  |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |  |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |  |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |  |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |  |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |  |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |  |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |  |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |  |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |  |  |   |   |   |  |  |
| <b>F. Travel</b>  |  |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |  |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |  |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |  |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |  |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |  |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |  |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |  |  |   | \$500                                   |   |  |  |

|  |  |                   |                       |          |
|--|--|-------------------|-----------------------|----------|
| <b>P. Carryover -- (If Applicable)</b> ..... |  | Federal Funds: \$ | Non-Federal funds: \$ | Total \$ |
|--|--|-------------------|-----------------------|----------|

|  |  |  |  |
|--|--|--|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |  |  |  |
| Cash (both Applicant and Third Party) ..... →                                |  |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →              |  |  |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE (Type or print)</b>           | <b>SIGNATURE (required for revised budget only)</b> | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

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Form CSREES-2004 (12/2000)

**BUDGET**

|   |   |          |   |  |  |   |                                |
|---|---|----------|---|--|--|---|--------------------------------|
| ORGANIZATION AND ADDRESS<br>University of Illinois Extension<br>4202 Williamson Place, Suite 2<br>Mt. Vernon, Illinois 62864  |   |          | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |  |  |   |                                |
|   |   |          | Duration Proposed<br>Months: <u>  24  </u>      | Duration Proposed<br>Months: <u>      </u> | Non-Federal<br>Proposed Cost-<br>Sharing/<br>Matching Funds<br>(If required) | Non-federal<br>Cost-Sharing/<br>Matching Funds<br>Approved by<br>CSREES<br>(If Different) | Funds Requested<br>by Proposer |
| PROJECT DIRECTOR(S)<br>Michael D. Plumer  |   |          |   |  |  |   |                                |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |  |  |   |                                |
|   |   | Calendar | Academic  |  |  |   |                                |
| 1. No. of Senior Personnel  |   |          |   |  |  |   |                                |
| a. ___ (Co)-PD(s) .....   |   |          |   |  |  |   |                                |
| b. ___ Senior Associates .....  |   |          |   |  |  |   |                                |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |   |  |  |   |                                |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |   |  |  |   |                                |
| b. ___ Other Professionals .....  |   |          |   |  |  |   |                                |
| c. ___ Paraprofessionals .....  |   |          |   |  |  |   |                                |
| d. ___ Graduate Students .....  |   |          |   |  |  |   |                                |
| e. ___ Prebaccalaureate Students .....  |   |          |   |  |  |   |                                |
| f. ___ Secretarial-Clerical .....   |   |          |   |  |  |   |                                |
| g. ___ Technical, Shop and Other .....  |   |          |   |  |  |   |                                |
| <b>Total Salaries and Wages</b> .....   |   |          |   |  | \$0  |   |                                |
| <b>B. Fringe Benefits</b> (If charged as Direct Costs)  |   |          |   |  |  |   |                                |
| <b>C. Total Salaries, Wages, and Fringe Benefits</b> (A plus B) .....   |   |          |   |  | \$0  |   |                                |
| <b>D. Nonexpendable Equipment</b> (Attach supporting data. List items and dollar amounts for each item.)  |   |          |   |  |  |   |                                |
| <b>E. Materials and Supplies</b>  |   |          |   |  |  |   |                                |
| <b>F. Travel</b>  |   |          |   |  | \$1,000  |   |                                |
| <b>G. Publication Costs/Page Charges</b>  |   |          |   |  |  |   |                                |
| <b>H. Computer (ADPE) Costs</b>   |   |          |   |  |  |   |                                |
| <b>I. Student Assistance/Support</b> (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)                   |   |          |   |  |  |   |                                |
| <b>J. All Other Direct Costs</b> (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |          |   |  |  |   |                                |
| <b>K. Total Direct Costs</b> (C through I) .....  |   |          |   |  | \$1,000  |   |                                |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |  |  |   |                                |
| <b>M. Total Direct and F&amp;A/Indirect Costs</b> (J plus K) .....  |   |          |   |  | \$1,000  |   |                                |
| <b>N. Other</b> .....   |   |          |   |  |  |   |                                |
| <b>O. Total Amount of This Request</b> .....  |   |          |   |  | \$1,000  |   |                                |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | <b>Federal Funds: \$</b>                        | <b>Non-Federal funds: \$</b>               | <b>Total \$</b>  |   |                                |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |   |  |  |   |                                |
| Cash (both Applicant and Third Party) .....   |   |          |   |  |  |   |                                |
| Non-Cash Contributions (both Applicant and Third Party) .....   |   |          |   |  |  |   |                                |
| <b>NAME AND TITLE</b> (Type or print)   | <b>SIGNATURE</b> (required for revised budget only) |          |   |  |  | <b>DATE</b>   |                                |
| <b>Project Director</b>   |   |          |   |  |  |   |                                |
| <b>Authorized Organizational Representative</b>   |   |          |   |  |  |   |                                |
| <b>Signature (for optional use)</b>   |   |          |   |  |  |   |                                |

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Form CSREES-2004 (12/2000)

**BUDGET EXPLANATION UNIVERSITY OF ILLINOIS**

**(Plumer)**

**Objectives 1 and 2**

**F. Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Illinois Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

## PROPOSED ACTIVITIES FOR OHIO STATE UNIVERSITY

(Tiu)

### Major Actions for Each Objective

1. Strengthen linkages between NCRAC Research and Extension Work Groups by:
  - a. Participating in Research Work Group meetings to provide input on design and feedback based on documented industry needs.
2. Enhance the NCRAC extension network for aquaculture information transfer by:
  - a. Attending the annual in-state aquaculture meeting to assist state aquaculture associations.
  - b. Providing 15 copies of aquaculture extension related materials produced in Ohio to the extension chairperson for distribution to all state contacts once annually.
  - c. Providing a link between NCRAC and public and private aquaculturists and other appropriate individuals or groups in Ohio.
  - d. Identifying and updating lists of key state contacts (legislators, government administrators, agency personnel, business leaders, and practicing or potential fish farmers) to receive the NCRAC newsletter and other pertinent materials.



**BUDGET**

|  |  |  |   |                                 |   |  |
|--|--|--|---|---------------------------------|---|--|
| ORGANIZATION AND ADDRESS<br>Ohio State University Research Foundation<br>1960 Kenny Road<br>Columbus, OH 43210-1063  |  |  | USDA AWARD NO. Year 1: Objectives 1 & 2 |                                 |   |  |
|  |  |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____ | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Laura G. Tiu  |  |  |   |                                 |   |  |
| <b>A. Salaries and Wages</b>   |  |  | <b>CSREES FUNDED WORK MONTHS</b>        |                                 |   |  |
| 1. No. of Senior Personnel   |  |  | Calendar                                | Academic                        | Summer  |  |
| a. ___ (Co)-PD(s) .....  |  |  |   |                                 |   |  |
| b. ___ Senior Associates .....   |  |  |   |                                 |   |  |
| 2. No. of Other Personnel (Non-Faculty)  |  |  |   |                                 |   |  |
| a. ___ Research Associates-Postdoctorates . . .  |  |  |   |                                 |   |  |
| b. ___ Other Professionals .....   |  |  |   |                                 |   |  |
| c. ___ Paraprofessionals .....   |  |  |   |                                 |   |  |
| d. ___ Graduate Students .....   |  |  |   |                                 |   |  |
| e. ___ Prebaccalaureate Students .....   |  |  |   |                                 |   |  |
| f. ___ Secretarial-Clerical .....  |  |  |   |                                 |   |  |
| g. ___ Technical, Shop and Other .....   |  |  |   |                                 |   |  |
| <b>Total Salaries and Wages</b> .....  |  |  |   |                                 |   | \$0  |
| B. Fringe Benefits (If charged as Direct Costs)  |  |  |   |                                 |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....  |  |  |   |                                 |   | \$0  |
| D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)  |  |  |   |                                 |   |  |
| E. Materials and Supplies  |  |  |   |                                 |   |  |
| F. Travel  |  |  |   |                                 |   | \$500  |
| G. Publication Costs/Page Charges  |  |  |   |                                 |   |  |
| H. Computer (ADPE) Costs   |  |  |   |                                 |   |  |
| I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)               |  |  |   |                                 |   |  |
| J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |  |  |   |                                 |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....   |  |  |   |                                 |   | \$500  |
| L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |  |  |   |                                 |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....   |  |  |   |                                 |   | \$500  |
| N. Other .....   |  |  |   |                                 |   |  |
| <b>O. Total Amount of This Request</b> .....   |  |  |   |                                 |   | \$500  |

|  |                          |                              |                 |
|--|--------------------------|------------------------------|-----------------|
| <b>P. Carryover -- (If Applicable)</b> ..... | <b>Federal Funds: \$</b> | <b>Non-Federal funds: \$</b> | <b>Total \$</b> |
|--|--------------------------|------------------------------|-----------------|

|  |   |  |
|--|---|--|
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b> |   |  |
| Cash (both Applicant and Third Party) .....                                  | → |  |
| Non-Cash Contributions (both Applicant and Third Party) .....                | → |  |

|   |   |             |
|---|---|-------------|
| <b>NAME AND TITLE</b> (Type or print)           | <b>SIGNATURE</b> (required for revised budget only) | <b>DATE</b> |
| <b>Project Director</b>                         |   |             |
| <b>Authorized Organizational Representative</b> |   |             |
| <b>Signature (for optional use)</b>             |   |             |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.  
 Form CSREES-2004 (12/2000)

UNITED STATES DEPARTMENT OF AGRICULTURE  
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

OMB Approved 0524-0039

Expires 03/31/2004

**BUDGET**

|   |   |  |   |   |   |  |  |
|---|---|--|---|---|---|--|--|
| ORGANIZATION AND ADDRESS<br>Ohio State University Research Foundation<br>1960 Kenny Road<br>Columbus, OH 43210-1063   |   |  | USDA AWARD NO. Year 2: Objectives 1 & 2 |   |   |  |  |
|   |   |  | Duration Proposed Months: <u>12</u>     | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |  |
| PROJECT DIRECTOR(S)<br>Laura G. Tiu   |   |  | Funds Requested by Proposer             | Funds Approved by CSREES (If different) |   |  |  |
| <b>A. Salaries and Wages</b><br>1. No. of Senior Personnel  |   |  | <b>CSREES FUNDED WORK MONTHS</b>        |   |   |  |  |
|   |   |  | Calendar                                | Academic                                | Summer  |  |  |
| a. ___ (Co)-PD(s) .....   |   |  |   |   |   |  |  |
| b. ___ Senior Associates .....  |   |  |   |   |   |  |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |  |   |   |   |  |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |  |   |   |   |  |  |
| b. ___ Other Professionals .....  |   |  |   |   |   |  |  |
| c. ___ Paraprofessionals .....  |   |  |   |   |   |  |  |
| d. ___ Graduate Students .....  |   |  |   |   |   |  |  |
| e. ___ Prebaccalaureate Students .....  |   |  |   |   |   |  |  |
| f. ___ Secretarial-Clerical .....   |   |  |   |   |   |  |  |
| g. ___ Technical, Shop and Other .....  |   |  |   |   |   |  |  |
| <b>Total Salaries and Wages</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>B. Fringe Benefits (If charged as Direct Costs)</b>  |   |  |   |   |   |  |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> ..... →   |   |  |   | \$0                                     |   |  |  |
| <b>D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)</b>  |   |  |   |   |   |  |  |
| <b>E. Materials and Supplies</b>  |   |  |   |   |   |  |  |
| <b>F. Travel</b>  |   |  |   | \$500                                   |   |  |  |
| <b>G. Publication Costs/Page Charges</b>  |   |  |   |   |   |  |  |
| <b>H. Computer (ADPE) Costs</b>   |   |  |   |   |   |  |  |
| <b>I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)</b>                   |   |  |   |   |   |  |  |
| <b>J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)</b>  |   |  |   |   |   |  |  |
| <b>K. Total Direct Costs (C through I)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |  |   |   |   |  |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>N. Other</b> ..... →   |   |  |   |   |   |  |  |
| <b>O. Total Amount of This Request</b> ..... →  |   |  |   | \$500                                   |   |  |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |  | <b>Federal Funds: \$</b>                | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |  |   |   |   |  |  |
| Cash (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| Non-Cash Contributions (both Applicant and Third Party) ..... →   |   |  |   |   |   |  |  |
| <b>NAME AND TITLE (Type or print)</b>   | <b>SIGNATURE (required for revised budget only)</b> |  |   |   | <b>DATE</b>   |  |  |
| <b>Project Director</b>   |   |  |   |   |   |  |  |
| <b>Authorized Organizational Representative</b>   |   |  |   |   |   |  |  |
| <b>Signature (for optional use)</b>   |   |  |   |   |   |  |  |

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0524-0039. The time required to complete this information collection is estimated to average 1.00 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the reviewing the collection of information.  
Form CSREES-2004 (12/2000)

**BUDGET**

|   |   |          |   |   |   |  |
|---|---|----------|---|---|---|--|
| ORGANIZATION AND ADDRESS<br>Ohio State University Research Foundation<br>1960 Kenny Road<br>Columbus, OH 43210-1063   |   |          | USDA AWARD NO.    Years 1 & 2: Objectives 1 & 2 |   |   |  |
|   |   |          | Duration Proposed Months: <u>24</u>             | Duration Proposed Months: _____         | Non-Federal Proposed Cost-Sharing/ Matching Funds (If required) | Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different) |
| PROJECT DIRECTOR(S)<br>Laura G. Tiu   |   |          | Funds Requested by Proposer                     | Funds Approved by CSREES (If different) |   |  |
| <b>A. Salaries and Wages</b>  | <b>CSREES FUNDED WORK MONTHS</b>                    |          |   |   |   |  |
|   |   | Calendar | Academic  | Summer                                  |   |  |
| 1. No. of Senior Personnel  |   |          |   |   |   |  |
| a. ___ (Co)-PD(s) .....   |   |          |   |   |   |  |
| b. ___ Senior Associates .....  |   |          |   |   |   |  |
| 2. No. of Other Personnel (Non-Faculty)   |   |          |   |   |   |  |
| a. ___ Research Associates-Postdoctorates . . .   |   |          |   |   |   |  |
| b. ___ Other Professionals .....  |   |          |   |   |   |  |
| c. ___ Paraprofessionals .....  |   |          |   |   |   |  |
| d. ___ Graduate Students .....  |   |          |   |   |   |  |
| e. ___ Prebaccalaureate Students .....  |   |          |   |   |   |  |
| f. ___ Secretarial-Clerical .....   |   |          |   |   |   |  |
| g. ___ Technical, Shop and Other .....  |   |          |   |   |   |  |
| <b>Total Salaries and Wages</b> .....   |   |          |   |   | \$0   |  |
| <b>B. Fringe Benefits</b> (If charged as Direct Costs)  |   |          |   |   |   |  |
| <b>C. Total Salaries, Wages, and Fringe Benefits (A plus B)</b> .....   |   |          |   |   | \$0   |  |
| <b>D. Nonexpendable Equipment</b> (Attach supporting data. List items and dollar amounts for each item.)  |   |          |   |   |   |  |
| <b>E. Materials and Supplies</b>  |   |          |   |   |   |  |
| <b>F. Travel</b>  |   |          |   |   | \$1,000   |  |
| <b>G. Publication Costs/Page Charges</b>  |   |          |   |   |   |  |
| <b>H. Computer (ADPE) Costs</b>   |   |          |   |   |   |  |
| <b>I. Student Assistance/Support</b> (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)                   |   |          |   |   |   |  |
| <b>J. All Other Direct Costs</b> (In budget narrative, list items and dollar amounts and provide supporting data for each item.)  |   |          |   |   |   |  |
| <b>K. Total Direct Costs (C through I)</b> .....  |   |          |   |   | \$1,000   |  |
| <b>L. F&amp;A/Indirect Costs.</b> (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.) |   |          |   |   |   |  |
| <b>M. Total Direct and F&amp;A/Indirect Costs (J plus K)</b> .....  |   |          |   |   | \$1,000   |  |
| <b>N. Other</b> .....   |   |          |   |   |   |  |
| <b>O. Total Amount of This Request</b> .....  |   |          |   |   | \$1,000   |  |
| <b>P. Carryover -- (If Applicable)</b> .....  |   |          | <b>Federal Funds: \$</b>                        | <b>Non-Federal funds: \$</b>            | <b>Total \$</b>   |  |
| <b>Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)</b>  |   |          |   |   |   |  |
| Cash (both Applicant and Third Party) .....   |   |          |   |   |   |  |
| Non-Cash Contributions (both Applicant and Third Party) .....   |   |          |   |   |   |  |
| <b>NAME AND TITLE</b> (Type or print)   | <b>SIGNATURE</b> (required for revised budget only) |          |   |   | <b>DATE</b>   |  |
| <b>Project Director</b>   |   |          |   |   |   |  |
| <b>Authorized Organizational Representative</b>   |   |          |   |   |   |  |
| <b>Signature (for optional use)</b>   |   |          |   |   |   |  |

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## BUDGET EXPLANATION FOR OHIO STATE UNIVERSITY

(Tiu)

### Objectives 1 and 2

- F. **Travel.** Annual costs: transportation, lodging, and meal expenses for the PI to attend a 1-day annual meeting of the Ohio Aquaculture Association at a destination to be determined by the aquaculture association (\$500).

**BUDGET SUMMARY ALL PARTICIPATING INSTITUTIONS**

Year 1

|  | <b>UW-Mil.</b> | <b>PURDUE</b>  | <b>MSU</b>     | <b>UMD</b>   | <b>NDSU</b>  | <b>KSU</b>   | <b>SDSU</b>  | <b>ISU</b>   | <b>UMC</b>   | <b>UI</b>    | <b>OSU</b>   | <b>TOTALS</b>   |
|--|----------------|----------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|
| Salaries and Wages                         |                |                | \$2,000        |              |              |              |              |              |              |              |              | \$2,000         |
| Fringe Benefits                            |                |                |                |              |              |              |              |              |              |              |              | \$0             |
| Total Salaries, Wages, and Fringe Benefits |                |                | \$2,000        |              |              |              |              |              |              |              |              | \$2,000         |
| Nonexpendable Equipment                    |                |                |                |              |              |              |              |              |              |              |              | \$0             |
| Materials and Supplies                     |                | \$3,500        | \$250          |              |              |              |              |              |              |              |              | \$3,750         |
| Travel                                     | \$500          | \$2,500        | \$1,000        | \$500        | \$500        | \$500        | \$500        | \$500        | \$500        | \$500        | \$500        | \$8,000         |
| All Other Direct Costs                     |                |                | \$500          |              |              |              |              |              |              |              |              | \$500           |
| <b>TOTAL PROJECT COSTS</b>                 | <b>\$500</b>   | <b>\$6,000</b> | <b>\$3,750</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$14,250</b> |

Year 2

|  | <b>UW-Mil.</b> | <b>PURDUE</b>  | <b>MSU</b>     | <b>UMD</b>   | <b>NDSU</b>  | <b>KSU</b>   | <b>SDSU</b>  | <b>ISU</b>   | <b>UMC</b>   | <b>UI</b>    | <b>OSU</b>   | <b>TOTALS</b>   |
|--|----------------|----------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|
| Salaries and Wages                         |                |                | \$1,500        |              |              |              |              |              |              |              |              | \$1,500         |
| Fringe Benefits                            |                |                |                |              |              |              |              |              |              |              |              | \$0             |
| Total Salaries, Wages, and Fringe Benefits |                |                | \$1,500        |              |              |              |              |              |              |              |              | \$1,500         |
| Nonexpendable Equipment                    |                |                |                |              |              |              |              |              |              |              |              | \$0             |
| Materials and Supplies                     |                | \$3,500        | \$250          |              |              |              |              |              |              |              |              | \$3,750         |
| Travel                                     | \$500          | \$2,500        | \$1,000        | \$500        | \$500        | \$500        | \$500        | \$500        | \$500        | \$500        | \$500        | \$8,000         |
| All Other Direct Costs                     |                |                | \$500          |              |              |              |              |              |              |              |              | \$500           |
| <b>TOTAL PROJECT COSTS</b>                 | <b>\$500</b>   | <b>\$6,000</b> | <b>\$3,250</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$500</b> | <b>\$13,750</b> |

### **SCHEDULE FOR COMPLETION OF OBJECTIVES**

Objective 1: Initiated in Year 1 and completed in Year 2.

Objective 2: Initiated in Year 1 and completed in Year 2.

Objective 3: Initiated in Year 1 and completed in Year 2.

## LIST OF PRINCIPAL INVESTIGATORS

**Fred P. Binkowski**, University of Wisconsin-Milwaukee

**Mark E. Einstein**, Purdue University

**Donald L. Garling**, Michigan State University

**Jeffrey L. Gunderson**, University of Minnesota-Duluth

**Chester L. Hill**, North Dakota State University

**Ronald E. Kinnunen**, Michigan State University

**Charles D. Lee**, Kansas State University

**Brian K. Miller**, Purdue University

**Jerry B. Mills**, South Dakota State University

**Joseph E. Morris**, Iowa State University

**Robert A. Pierce II**, University of Missouri-Columbia

**Michael D. Plumer**, University of Illinois

**Laura G. Tiu**, Ohio State University

## VITA

Fred P. Binkowski  
Great Lakes WATER Institute  
University of Wisconsin-Milwaukee  
600 E. Greenfield Avenue  
Milwaukee, WI 53204

Phone: (414) 382-1700  
Fax: (414) 382-1705  
E-mail: sturgeon@csd.uwm.edu

### EDUCATION

B.S. University of Wisconsin-Milwaukee, 1971, Zoology  
M.S. University of Wisconsin-Milwaukee, 1974, Zoology (Fisheries Biology)

### POSITIONS

Director (1993-present), Aquaculture Institute, University of Wisconsin System, UWS/UWM Great Lakes WATER Institute  
Senior Scientist (1991-present), Associate Scientist (1987-1990), Senior Fisheries Biologist (1984-1986), Associate Fisheries Biologist (1981-1983), and Assistant Fisheries Biologist (1978-1980), Center for Great Lakes Studies, University of Wisconsin Great Lakes Research Facility  
Research Specialist (Fisheries) (1975-1978), Department of Zoology, University of Wisconsin-Milwaukee

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

American Fisheries Society; Early Life History and Fish Culture Sections  
World Aquaculture Society; U.S. Chapter

### SELECTED PUBLICATIONS

- Heyer, C. J., T. J. Miller, F. P. Binkowski, E. M. Calderone, and J. A. Rice. 2001. Understanding maternal effects as a recruitment mechanism in Lake Michigan yellow perch (*Perca flavescens*). *Canadian Journal of Fisheries and Aquatic Sciences* 58:1477-1487.
- Yeo, S.E. and F.P. Binkowski. 1999. Beneficial utilization of aquaculture effluents and solids. Report submitted to NCRAC, Michigan State University, East Lansing, Michigan.
- Letcher, B.H., J.A. Rice, L.B. Crowder, and F.P. Binkowski. 1996. Size-dependent effects of continuous and intermittent feeding on starvation time and mass loss in starving yellow perch larvae and juveniles. *Transactions of the American Fisheries Society* 125:14-26.
- Binkowski, F.P., and L.G. Rudstam. 1994. The maximum daily ration of Great Lakes bloater. *Transactions of the American Fisheries Society* 123:335-343.
- Rudstam, L.G., F.P. Binkowski, and M.A. Miller. 1994. A bioenergetics model for analysis of food consumption patterns by bloater in Lake Michigan. *Transactions of the American Fisheries Society* 123:344-357.
- Binkowski, F.P., J.J. Sedmark, and S.O. Jolly. 1993. An evaluation of *Pfaffia* yeast as a pigment source for salmonids. *Aquaculture Magazine*, March/April:1-4.
- Miller, T., L. Crowder, J. Rice, and F.P. Binkowski. 1992. Body size and the ontogeny of the functional response in fishes. *Canadian Journal of Fisheries and Aquatic Sciences* 49:805-812.
- Somer, C.V., F.P. Binkowski, M.A. Schalk, and J.M. Bartos. 1986. Stress factors that can affect studies of drug metabolism in fish. *Veterinary and Human Toxicology* 28 (Supplement 1):45-54.



## VITA

Mark E. Einstein  
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### EDUCATION

B.S. Purdue University, 1976, Cytogenetics  
M.S. Purdue University, 1981, Quantitative Genetics

### POSITIONS

Chief Web Officer for Illinois/Indiana Sea Grant College Program (2000-present), Purdue University  
Site Manager (1996-present), SGNIS (Sea Grant Nonindigenous Species)  
Site Manager (1994-present), AquaNIC (Aquaculture Network Information Center)  
Senior Statistical Associate (1991-present), Statistical Research Associate (1985-1991), Departmental  
Statistics, Animal Sciences, Purdue University  
Lab Manager (1976-1985), Quantitative Genetics, Animal Sciences Department, Purdue University

### SELECTED PUBLICATIONS

- Swann, D.L., and M. Einstein. 2000. User analysis and future directions of the web-based Aquaculture Network Information Center. *Journal of Extension*, [On-line serial], 38(5). Available: <http://www.joe.org/joe/2000october/iw2.html>.
- Miller, A.H., L. Aylsworth, M. Einstein, M.J. Flory, T. Hyde, D.A. Jensen, B.K. Miller, and M. Sales. 1997. Making high quality university research and education products readily available to the user public: A National Sea Grant Zebra Mussel and Nonindigenous Species Web Site. *Proceedings of the Seventh International Zebra Mussel and Other Aquatic Nuisance Species Conference*.
- Swann, L., M. Einstein, J. Wheeler, and A. McBride. 1997. Finding aquaculture information on the Internet. *World Aquaculture Association Abstract*.
- Einstein, M. and L. Swann, 1994. Guidelines for Submitting Documents for Electronic Distribution. *Fact Sheet*.
- Swann, L., G. Jensen, and M. Einstein. 1994. Using the Aquaculture Network Information Center (AquaNIC). *Abstract for World Aquaculture Society meeting*.
- Swann, L, T. Luba, and M. Einstein. 1994. Putting multimedia to work in outreach education. *Abstract for World Aquaculture Society meeting*.
- Einstein, M.E., T.S. Stewart, D.L Lofgren, and A.P. Schinckel. 1988. A summary of genetic and phenotypic parameters for characteristics in swine. *Indiana Agricultural Experiment Station Bulletin #545*.
- Einstein, M.E., and D.P. Doolittle. 1984. Direct and indirect selection for eight week body weight near a selection limit in mice. *Z. Tierz. Zuecht* 101:275-279.

## VITA

Donald L. Garling, Jr.  
Department of Fisheries and Wildlife  
Michigan State University  
9A Natural Resources Building  
East Lansing, MI 48824-1222

Phone: (517) 353-1989  
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E-mail: garlingd@pilot.msu.edu

### EDUCATION

B.S. University of Dayton, 1970, Biological Sciences  
M.S. Eastern Kentucky University, 1972, Biological Sciences  
Ph.D. Mississippi State University, 1975, Zoology–Fisheries Option

### POSITIONS

Professor (1990-present), Associate Professor (1985-1990), and Assistant Professor (1980-1985),  
Department of Fisheries and Wildlife, Michigan State University  
Aquaculture and Fisheries Extension Specialist (1985-present), Department of Fisheries and Wildlife,  
Michigan State University  
Assistant Professor of Fisheries Science (1976-1980), Department of Fisheries and Wildlife Sciences, Virginia  
Polytechnic Institute and State University

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

American Fisheries Society, Fish Culture and Fisheries Educators Sections  
Comparative Nutrition Society  
World Aquaculture Society

### SELECTED PUBLICATIONS

- Garling, D. L., and W. W. Taylor. 2002. My bluegills are stunted HELP! Michigan State University Extension Bulletin E-1776, East Lansing.
- Garling, D.L. 2002. Fee fishing pond management. Pages 44-47 *in* Sunfish culture guide. NCRAC Culture Series #102, NCRAC Publications Office, Iowa State University, Ames.
- Garling, D., P. Wilbert, A. Westmaas, S. Miller, R. Sheehan, P. Wills, and J. Paret. 2002. Production of polyploid sunfishes. Pages 34-40 *in* Sunfish culture guide. NCRAC Culture Series #102, NCRAC Publications Office, Iowa State University, Ames.
- Morris, J.E., C.C. Mischke, and D. L. Garling (editors). 2002. Sunfish culture guide. NCRAC Culture Series #102, NCRAC Publications Office, Iowa State University, Ames.
- Riche, M., and D. Garling. 2002. Collecting and submitting fish samples for disease diagnosis. Pages 69-78 *in* Sunfish culture guide. NCRAC Culture Series #102, NCRAC Publications Office, Iowa State University, Ames.
- Riche, M., and D. Garling. 2002. Calculating chemical treatment rates. Pages 48-57 *in* Sunfish culture guide. NCRAC Culture Series #102, NCRAC Publications Office, Iowa State University, Ames.
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### POSITIONS

Associate Director, Fisheries/Aquaculture Educator and Professor (1998 to present), and Fisheries/Aquaculture Educator (1979 to 1998), University of Minnesota Sea Grant Extension Fishery Specialist/Fishery Biologist (1978-1979), Missouri Conservation Department

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

American Fisheries Society (Minnesota Chapter: President 1991-1992)  
International Association of Astacology (current Board member)  
Sea Grant Advisor Service Association (Great Lakes Network)

### SELECTED PUBLICATIONS

Gunderson, J.L., and R. Kinnunen. 2002. The HACCP approach to prevent the spread of aquatic nuisance species by aquaculture and baitfish operations. *In* R.E. Kinnunen, editor, Environmental Strategies for Aquaculture Symposium Proceedings. NCRAC CD Series #101, North Central Regional Aquaculture Center Publications Office, Iowa State University, Ames.

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Gunderson, J.L., and P. Tucker. 2000. A white paper on the status and needs of baitfish aquaculture in the North Central Region. NCRAC, Michigan State University, East Lansing.

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### POSITIONS

Value Added Ag/High Value Crop Area Extension Specialist (2001-present), Williston Research Extension Center, North Dakota State University  
Roosevelt County Extension Agent (1993-2000), Montana State University Extension Associate Professor, Culberston  
Graduate Research Assistant (1992-1993), North Dakota State University  
Technician (summers 1989-1990), Eastern Montana Ag Research Station, Sidney

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

National Association of County Agricultural Agents  
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### POSITIONS

Michigan Sea Grant Extension Agent (1981-present), Upper Peninsula, Michigan State University  
Acting Alger County Extension Director (1988-1989), Michigan State University Cooperative Extension Service  
Fisheries Pathologist (1981), Rangen Research Laboratory, Hagerman, Idaho  
Fisheries Biologist (1979-1980), U.S. Fish and Wildlife Service, Leetown, West Virginia

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Alliance for Marine Remote Sensing  
American Fisheries Society (Sections: Fish Health, Salmonid)  
Michigan Association of Extension Agents  
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Sea Grant Advisory Service Association

### SELECTED PUBLICATIONS

- Kinnunen, R. R. 2002. Environmental strategies for aquaculture symposium proceedings. 62<sup>nd</sup> Midwest Fish and Wildlife Conference, Minneapolis, Minnesota. NCRAC CD-ROM Series #101, NCRAC Publications Office, Iowa State University, Ames.
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- Kinnunen, R.E. 1992. North Central Region 1990 salmonid egg and fingerling purchases, production, and sales. NCRAC Technical Bulletin Series #103. NCRAC Publications Office, Iowa State University, Ames.

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### POSITIONS

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Agricultural Liaison Biologist (1989-1995), Kansas Department of Wildlife and Parks  
Extension Assistant (1986-1989), Kansas State University

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Kansas Chapter of the Society for Range Management  
Kansas Chapter of the Wildlife Society  
Society for Range Management  
The Wildlife Society

### SELECTED PUBLICATIONS

- Lee, C.D. 1998. Deer damage control options. Kansas State University and Cooperative Extension Service (C-728).
- Lee, C.D., and R.J. Johnson. 1997. Wildlife habitat evaluation handbook-participant's manual. Kansas State University Cooperative Extension Service (MF 2266).
- Hall, D., R.J. Johnson, and C.D. Lee 1997. Wildlife habitat evaluation handbook-leader's guide, Kansas State University Cooperative Extension Service (MF 2265).
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- Lee, C.D., P.S. Gipson, B. Hlavachick, and T. Berger. 1997. Explanations for recent range expansions by wild hogs into midwestern states. Pages 148-150 in C.D. Lee and S.E. Hygnstrom, editors. Thirteenth Great Plains Wildlife Damage Control Workshop Proceedings. Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan.

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### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Coastal Communities and Economics Theme Team, National Sea Grant  
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### SELECTED PUBLICATIONS

Miller, B.K., K. Schaaf, R.K. Swihart, and C.L. Arnold, Jr. (In press). Historical and human dimensions of nature-based planning: is time on our side? *In* R.K. Swihart, and J.E. Moore, editors. *Conserving biodiversity in agricultural landscapes: model-based planning tools for systems with sharp edges*. Purdue University Press, West Lafayette, Indiana.

Miller, B.K., K. Schaaf, N.J. Carroll, and C.L. Arnold, Jr. (In press). Putting models into practice. *In* R.K. Swihart, and J.E. Moore, editors. *Conserving biodiversity in agricultural landscapes: model-based planning tools for systems with sharp edges*. Purdue University Press, West Lafayette, Indiana.

Whitford, F., M. Mayes, D. Urban, J. Wolt, R. Bennett, R. Turco, M. Jones, B.K. Miller, and L. Bledsoe. 2002. Chapter 4. Ecological risk assessments: evaluating pesticide risks to non-target species. *Pages 140-195 in* F. Whitford editor. *The complete book of pesticide management: science, regulation, stewardship, and communication*. Wiley and Sons, Inc.

Miller, B.K., M. Spranger, and B. Wilkins. 2001. Planning The extension program: how do we decide what to do? *Pages 19-26 in* *Fundamentals of a Sea Grant Extension Program*, National Sea Grant College Program.

Miller, B.K., J. Lemus, B. Malouf, J. Murray, and J. Rasmussen. 2002. Regional and national Sea Grant Extension programming. Some issues, opportunities, and conceptual mechanisms for improving Sea Grant's capabilities. A Discussion Paper to the Assembly of Extension Program Leaders. 36 pp.

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### POSITIONS

Fisheries and Aquaculture Specialist/Associate Professor (1995-present), Specialist/Assistant Professor (1988-present), Department of Animal Ecology, Iowa State University and Associate Director, North Central Regional Aquaculture Center (1990-present)  
Graduate Research Assistant (1986-1988), Mississippi State University  
Aquaculture Manager (1982-1986), Stiles Farm Foundation  
Graduate Research Assistant (1981-1982), and Research Technician I (1980-1981), Texas A&M University  
Fisheries Biologist Aide (1979), Indiana Department of Natural Resources

### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

American Fisheries Society: Iowa Chapter; Education, Fish Culture, Early Life History, and Fish Management Sections  
Iowa Aquaculture Association  
World Aquaculture Society  
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### SELECTED PUBLICATIONS

- Lane, R. L. and J. E. Morris. 2002. Comparison of prepared feed versus natural food ingestion between pond-cultured bluegill and hybrid sunfish. *Journal of the World Aquaculture Society* 33: 517-519.
- Lane, R.L., and J. E. Morris. 2000. Biology, prevention, and effects of common grubs (*Digenetic trematodes*) in freshwater fish. NCRAC Technical Bulletin Series #115, NCRAC Publications Office, Iowa State University, Ames.
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- Mischke, C.C., and J.E. Morris. 1998. Sunfish (*Lepomis* spp.) culture. NCRAC Video Series #104, NCRAC Publications Office, Iowa State University, Ames.
- Mischke, C.C., and J.E. Morris. 1998. Growth and survival of larval bluegills in the laboratory under different feeding regimes. *Progressive Fish-Culturist* 60:206-213.
- Mischke, C.C., and J.E. Morris. 1997. Out-of-season spawning of sunfish (*Lepomis* spp.) in the laboratory. *Progressive Fish-Culturist* 59:297-302.
- Bryan, M.D., J.E. Morris, and G.J. Atchison. 1994. Methods for culturing bluegill in the laboratory. *Progressive Fish-Culturist* 56:217-221.

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### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

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### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Association of Natural Resource Extension Professionals  
Illinois Extension Agricultural Association  
National Association of County Agricultural Agents  
Soil and Water Conservation Society

### SELECTED PUBLICATIONS

- Ebelhar, S., and M. Plumer. 1999. Management of rye and ryegrass as cover crops for no-till. Agronomy Research Report, Dixon Springs.
- Ebelhar, S., and M. Plumer. 1998. Rye cover crops for no-till soybeans. Agronomy Research Report, Dixon Springs.
- Ebelhar, S., and M. Plumer. 1999. Effects of rye cover crops and reduced herbicides rates on weed control in soybeans. Agronomy Research Report, Dixon Springs.
- Plumer, M., and E. Knake. 1996. Begetative filter strip slow runoff. Weed Control Manual, volume 30. Meister Publishing Company, Ohio.
- Plumer, M. 1994. Bringing idle land into production under conservation compliance. Agronomy Research Report 1994-10.
- Plumer, M. 1998. No-till, what we have learned. Illinois Steward 6(4).
- Farnsworth, R., and M. Plumer. 1993. Short term profit or long term stewardship. Illinois Steward 2(4).

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Laboratory Technician (1987-1988), Mote Marine Laboratory, Sarasota, Florida  
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### SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Kentucky Aquaculture Association  
Ohio Aquaculture Association  
National Association of State Aquaculture Coordinators  
U.S. Chapter World Aquaculture Society  
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### SELECTED PUBLICATIONS

- Wallat, G. Tiu, L., and D. Rapp. 2001. Comparison of two spawning methods for the production of feed-trained yellow perch fingerlings and first year grow-out. Centers at Piketon Fact Sheet.
- Webster, C.D., L.G. Tiu, and A.M. Morgan. 1999. Effect of partial and total replacement of fish meal on growth and body composition of sunshine bass fed practical diets. *Journal of the World Aquaculture Society* 30(4):443-453.
- Webster, C.D., L.G. Tiu, and J.H. Tidwell. 1997. Growth and body composition of hybrid bluegill (*Lepomis cyanellus* × *L. macrochirus*) fed practical diets containing various percentages of protein. *Journal of the World Aquaculture Society* 28:230-240.
- Webster, C.D., L.G. Tiu, J.H. Tidwell, and J.M. Grizzle. 1997. Growth and body composition of channel catfish fed diets containing various percentages of canola meal. *Aquaculture* 150:103-112.
- Webster, C.D., L.G. Tiu, and J.H. Tidwell 1997. Effects of replacing fish meal in diets on growth and body composition of palmetto bass (*Morone saxatilis* × *M. chrysops*) raised in cages. *Journal of Applied Aquaculture* 7(1):53-67.