

REGIONAL AQUACULTURE EXTENSION SPECIALIST (RAES)

Chairperson: Laura G. Tiu, Ohio State University

Industry Advisory Council Liaison: Curtis Harrison, Hurdland, Missouri

Extension Liaison: Laura G. Tiu

Funding Request: \$225,000

Duration: 3 Years (September 1, 2005 - August 31, 2008)

Objectives:

1. Provide leadership for the aquaculture industry in the North Central Region (NCR).
2. Enhance information transfer.

Proposed Budget:

Institution	Principal Investigator(s)	Objective(s)	Year 1	Year 2	Year 3	Total
Ohio State University	Hanping Wang, Laura G. Tiu, and Geoffrey K. Wallat	1 & 2	\$77,000	\$74,000	\$74,000	\$225,000
Totals			\$77,000	\$74,000	\$74,000	\$225,000

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JUSTIFICATION

The goal of the United States Department of Agriculture (USDA) Regional Aquaculture Center's (RAC) program is the enhancement of sustainable, profitable commercial aquaculture production and allied industries to benefit producers, consumers, and the American economy (NCRAC 2003). The North Central Regional Aquaculture Center's (NCRAC) mission is to enhance aquaculture through education, research, and technology transfer to support a sustainable profitable industry throughout the NCR (NCRAC 1999). Outreach education, specifically NCRAC Extension, is a core component of the long-term development of an economically and environmentally sound aquaculture industry (Swann and Morris 2001).

Unfortunately, there are currently a limited number of extension full-time equivalents (FTEs) in the region to address the needs of the aquaculture industry. The Extension White Paper (Swann and Morris 2001) lists less than 3.0 FTEs in aquaculture extension in the entire NCR. This lack of extension personnel is just one of the critical factors believed to impede the development and implementation of educational programs. Other factors include: lack of institutional support for extension; lack of sustained needs-based educational programs; and the under-utilization of distance education program delivery methods (Swann and Morris 2001).

In an effort to address some of these identified needs and better coordinate Extension programming in the NCR, the NCRAC Industry Advisory Committee and the NCRAC Extension Technical Committee agree that a Regional Aquaculture Extension Specialist (RAES) should become part of the NCRAC team. The success of this position will be dependant on the participation of key members of the aquaculture industry in the NCR, including extension specialists, researchers, and farmers, on the advisory committee that will guide the selection and programming efforts of the RAES.

RELATED CURRENT AND PREVIOUS WORK

The National Aquaculture Development Plan (JSA 1996) outlines several goals for the development of the aquaculture industry in the United States. Among these are: enhance job creation and economic growth; ensure that the industry's long-term development is sustainable and compatible with responsible environmental stewardship; and provide American consumers with domestically produced, high quality, safe, competitively priced, and nutritious aquaculture products. In addition, the Plan concedes the challenge of providing accurate, objective, and realistic information about aquaculture to the general public, consumers, and policy makers. To be most effective, efforts should be well coordinated and practical. The Plan states that for maximum impact, basic and applied research should have eventual commercial adoption. This requires that new knowledge be effectively transferred to the private sector in order for the benefits to be fully realized (JSA 1996). A multi-state aquaculture extension program will help facilitate this process.

Inter-state extension programs in commodities other than aquaculture have been successful. A four-state dairy extension program involving the states of Illinois, Iowa, Minnesota, and Wisconsin has sponsored the Four-State Dairy Nutrition Conference for a number of years. In the poultry area, there is a New England poultry regionalization effort involving the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. This group has sponsored several programs for the poultry industry such as the New England Poultry Management Conference. In the Midwestern states, an inter-state poultry extension program has been conducting extension seminars and conferences for the past 15 years. These programs have provided commercial poultry producers in the states of Illinois, Indiana, Kentucky, Michigan, and Ohio with information to help them operate a successful poultry business (Koelkebeck 2004).

The Aquaculture Extension White Paper (Swann and Morris 2001) does an excellent job of identifying NCR aquaculture extension issues and offering tangible solutions. However, a plan has yet to be implemented, in part due to the small numbers of FTEs and the inability to coordinate a more organized effort. The RAES will be the mechanism to enable the coordination and implementation of extension activities in the NCR.

In 2002, NCRAC provided funds for the North Central Aquaculture Regional Extension Facilitator (AREF). This is a Web-based tool designed to assist current and potential aquaculturists in the NCR. The RAES will be able to utilize the AREF Web based information and phone service as a resource. The RAES will focus more on developing regional initiatives, in the form of workshops, meetings and regional initiatives. Although the RAES will have a Web presence, it will not be duplicative of the AREF. A representative of the AREF program will be invited to serve on the RAES advisory committee.

ANTICIPATED BENEFITS

The success of any Extension program lies in effective delivery, curriculum development, and transfer of information using the teaching/learning process. The traditional role of focusing on production technology has slowed and a new focus on issues like industry development, the environment, economics, and sustainability has emerged. Producers are responding to these new issues by asking for guidance and education. The industry believes that creating a position of a Regional Aquaculture Extension Specialist will give them access to the science-based guidance and information that they are seeking.

The RAES will help states determine what their needs are and design and implement programs to address those needs. Using the logic model as a guide (Figure 1), the RAES will develop a regional aquaculture program with outputs, in the forms of fact sheets, consultations, regional workshops, etc., designed to address priority issues. These programs will be continually developed, implemented, evaluated, and reviewed in conjunction with the RAES Advisory Committee to ensure their effectiveness. Cooperation with other NCR extension professionals will be enhanced by inviting representatives from around the region to serve on the RAES Advisory committee that will help to determine priorities and guide the RAES.

The long-term impact of the RAES will be an increase in the value of the aquaculture industry in the NCR. This includes an increased number of successful and sustainable aquaculture operations. Short and medium term impacts include enhanced access by stakeholders to research based information, an increase in the number of regional workshops, a strengthening of state aquaculture associations, and enhanced communication between academia and the industry in the NCR.

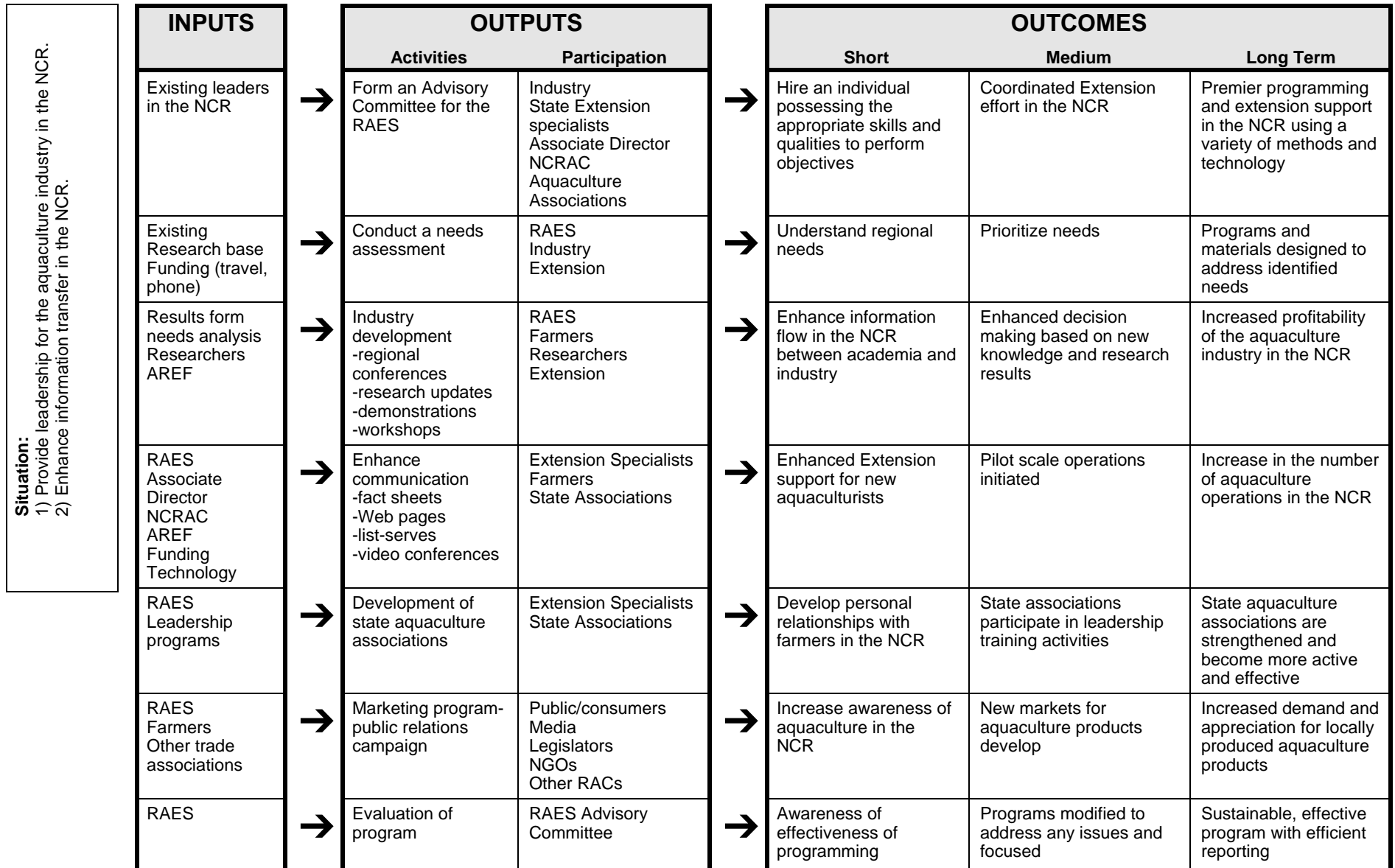
OBJECTIVES

1. Provide leadership for the aquaculture industry in the North Central Region (NCR).
2. Enhance information transfer.

PROCEDURES

1. An advisory committee comprised of interested individuals from the NCR (including industry, research, and extension personnel) will be organized to create a job description for the RAES and conduct the candidate search and interview process. While being a subject matter specialist will be important, the RAES will also be a "people specialist" highly skilled in communication, team building, and community development and possess an ability to reach out to other disciplines to strengthen research and extension programming in the NCR.
2. The RAES, working with the industry, state aquaculture associations, other trade organizations, researchers, and other extension specialists, will conduct a situation analysis, including utilizing existing documents such as the Extension White Paper, to determine the extension needs and priority issues of individual states or clusters of states within the NCR. Once these needs and issues have been identified, the RAES will develop materials, projects, and programs that are relevant, responsive, and provide science-based information. This will include fact sheets, workshops, and conferences. As the budget for materials and supplies will be reduced during Years 2 and 3, the RAES will be encouraged to develop partnerships and solicit additional funding to provide programming and workshops to address identified issues.

Figure 1. Logic Model: Regional Aquaculture Extension Specialist (RAES) Proposal: Developing a regional aquaculture extension program for the North Central Region (NCR).



Assumptions: Current NCRAC members (Industry, Extension, and Research) will support this position with their time and talents.

3. The RAES will address the needs of practicing aquaculturists with direct, hands-on assistance, and farm visits and aid in developing relationships with appropriate researchers. Regional researchers and extension specialists will be tapped to present at regional conferences. Farmers with specific needs will be directed to appropriate resources or researchers. The RAES will concentrate on issues impacting the profitability of aquaculture in the NCR.
4. The RAES will take a lead role in the development efforts of the state aquaculture associations so that they may drive the continued growth of aquaculture in the NCR. The RAES will attend annual meetings, network with key association leaders, deliver the latest scientific and technical information, and provide support to the associations. The RAES will provide coordination among state associations and provide leadership training for associations and the industry.
5. The RAES will enhance current communication methods (fax-back, mail, E-mail list-serves, Web page postings, and regional conferences) and develop new communication strategies for the region. A telephone hotline number will be installed to provide regional support via phone consultations and mailed information. This will be useful to those without Internet access. Information will be transmitted quickly and efficiently using new topic-specific E-mail list-serves, Web site catalogs of frequently asked questions, electronic newsletters and Web sites utilizing streaming video technology. The RAES will work with NCR researchers and Extension specialists in developing and disseminating fact sheets, technical bulletins, or other appropriate publications summarizing previous NCRAC funded research project results, as well as current research results. To market the position, E-mail and phone contact information for the RAES will be distributed via a refrigerator magnet to every known fish farmer in the NCR. Liberal use of video-conferencing capabilities will allow more frequent contact between the RAES and interested states. The RAES will work with the AREF, located at the University of Wisconsin-Milwaukee/Great Lakes WATER Institute and the NCRAC Associate Director's office at Iowa State University. The RAES will utilize and direct clients to the resource matrix and Web page developed by the AREF, cataloging the contacts in the NCR that are important to aquaculture. The RAES will work to coordinate and develop regional activities with the AREF.
6. The RAES will provide leadership for developing a program to market aquaculture in the NCR. Working with industry representatives, Extension specialists, and other agencies, the RAES will promote the positive message of aquaculture in the NCR and work to enhance knowledge of the industry by those not directly involved in the industry. This public relations aspect is critically needed by the aquaculture industry. In addition, the RAES will work to increase demand for locally raised aquaculture products and help find new markets.
7. The RAES will remain in communication with their RAES advisory committee, keeping it apprised of progress and challenges. The RAES will be evaluated on performance on an annual basis by the committee.
8. Finally, the RAES will work to share information and resources among RACs to avoid duplication of effort, identify model programs that can be expanded regionally or nationally, and assess any opportunities for inter-regional coordination.

FACILITIES

The Ohio Center for Aquaculture Development (OCAD) at the Ohio State University (OSU) South Centers is uniquely qualified for consideration as the host institution for the RAES. Our goal is to become a leader in aquaculture extension and research in the NCR. OCAD currently employs two highly qualified, full time aquaculture specialists, an internationally known researcher and three research assistants. Ohio has one of the most active aquaculture extension programs in the NCR, hosting at least three regional workshops a year and serving hundreds of clientele from Ohio and several other states as well. OCAD has an active, up-to-date Web site and three list-serves that have enhanced communication among aquaculturists in the NCR. OCAD Extension specialists are known for quality and quantity of information transfer.

OCAD is currently receiving USDA special research grant funding that has enabled the expansion of research programs directed at further developing aquaculture in the NCR. These enhanced research capabilities will enable the RAES to have access to the most up-to-date science-based information in the NCR. In response to the need for additional research facilities, OCAD is developing a new satellite center in Bowling Green, Ohio. Also located at the satellite center will be an aquaculture research and extension associate (REA). The REA will be focusing on baitfish and recirculating technology research, as well as extension programming in the northwest corner of the state. We feel that this site would be the most appropriate home base for the RAES as they will be within driving distance of several states in the NCR and close to Toledo, Ohio airport for air transportation. Administrative support will be available on site and will be shared by the RAES and the REA. Students from nearby Bowling Green University may be solicited for temporary work assignments. Office space, supervision (position will be supervised by Laura Tiu, Aquaculture Specialist for OSU), and administrative support will be supplied by OCAD and OSU.

OCAD has access to the latest technology for delivering quality programming. The South Centers at Piketon houses one of three OSU Learning Centers equipped with satellite and videoconferencing technology. A full-time technology coordinator is located on site to provide support. A Cooperative Development Center, Small Business Development Center, and Agriculture Marketing Program are also on site to provide support to the Aquaculture Program. In addition, the Ohio Agriculture and Research Development Center, the parent department of the OSU South Centers, houses a Communications and Technology Department with its own non-linear video production unit, streaming Web-server, compressed video technologies, satellite uplinks and downlinks, and communications support (electronic and printed material, news and media relations, graphic design, photography, printing, publication production and distribution, and development, production, and distribution of DVD technology). All of these services will be available to the RAES.

REFERENCES

- JSA (Joint Subcommittee on Aquaculture). 1996. National Science and Technology Council of 1996 National Aquaculture Development Plan. Available online: <http://lama.kcc.hawaii.edu/praise/nadp-1996.html>
- Koelkebeck, K. W. 2004. Inter-state cooperation to deliver better extension. University of Illinois at Urbana-Champaign. Available online: <http://www.traill.uiuc.edu/poultrynet/paperDisplay.cfm?Type=paper&ContentID=148>
- NCRAC (North Central Regional Aquaculture Center). 1999. A strategic plan for the North Central Regional Aquaculture Center. NCRAC, Michigan State University, East Lansing. Available online: <http://ag.ansc.purdue.edu/aquanic/ncrac/plan.htm>.
- NCRAC. (North Central Regional Aquaculture Center). 2003. Operations Manual. February 2003. Available online: <http://ag.ansc.purdue.edu/aquanic/ncrac/operat/op.htm>
- Swann, L., and J. Morris. 2001. A white paper on the status and needs for aquaculture extension outreach for the North Central Region. Available online: <http://ag.ansc.purdue.edu/aquanic/ncrac/wpapers/ext0901.doc>

PROJECT LEADERS

<u>State</u>	<u>Name</u>	<u>Area of Specialization</u>
Ohio	Hanping Wang Ohio State University	Fish Genetics/Reproduction
Ohio	Laura G. Tiu Ohio State University	Aquaculture Extension/Adult Education
Ohio	Geoffrey K. Wallat Ohio State University	Aquaculture Production/Yellow Perch

PARTICIPATING INSTITUTION AND PRINCIPAL INVESTIGATORS

Ohio State University (OSU)

Hanping Wang
Laura G. Tiu
Geoffrey K. Wallat

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET

ORGANIZATION AND ADDRESS Ohio State University Research Foundation 1960 Kenny Road 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) Hanping Wang, Laura G. Tiu, and Geoffrey K. Wallat			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. ___ (Co)-PD(s)						
b. ___ Senior Associates						
2. No. of Other Personnel (Non-Faculty)			12			\$45,000
a. <u>1</u> Research Associates-Postdoctorates . . .						
b. ___ Other Professionals						
c. ___ Paraprofessionals						
d. ___ Graduate Students						
e. ___ Prebaccalaureate Students						
f. ___ Secretarial-Clerical						
g. ___ Technical, Shop and Other						
Total Salaries and Wages						\$45,000
B. Fringe Benefits (If charged as Direct Costs)						\$13,815
C. Total Salaries, Wages, and Fringe Benefits (A plus B)						\$58,815
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$4,685
F. Travel						\$10,000
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.)						\$3,500
K. Total Direct Costs (C through I)						\$77,000
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.)						
M. Total Direct and F&A/Indirect Costs (J plus K)						\$77,000
N. Other						
O. Total Amount of This Request						\$77,000
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)						
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)						

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
BUDGET

OMB Approved 0524-0039
 Expires 03/31/2004

ORGANIZATION AND ADDRESS Ohio State University Research Foundation 1960 Kenny Road Columbus, OH 43210-1063			USDA AWARD NO. Year 2: Objectives 1 & 2						
PROJECT DIRECTOR(S) Hanping Wang, Laura G. Tiu, and Geoffrey K. Wallat			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)			
A. Salaries and Wages 1. No. of Senior Personnel			CSREES FUNDED WORK MONTHS						
			Calendar	Academic	Summer				
a. ____ (Co)-PD(s)									
b. ____ Senior Associates									
2. No. of Other Personnel (Non-Faculty) a. <u>1</u> Research Associates-Postdoctorates ...			12			\$46,350			
b. ____ Other Professionals									
c. ____ Paraprofessionals									
d. ____ Graduate Students									
e. ____ Prebaccalaureate Students									
f. ____ Secretarial-Clerical									
g. ____ Technical, Shop and Other									
Total Salaries and Wages →						\$46,350	\$0	\$0	\$0
B. Fringe Benefits (If charged as Direct Costs)						\$14,229			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →						\$60,579	0	\$0	\$0
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)									
E. Materials and Supplies						\$1,421			
F. Travel						\$9,000			
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.)						\$3,000			
K. Total Direct Costs (C through I) →						\$74,000	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.)									
M. Total Direct and F&A/Indirect Costs (J plus K) →						\$74,000	0	\$0	\$0
N. Other →									
O. Total Amount of This Request →						\$74,000	0	\$0	\$0
P. Carryover -- (If Applicable)			Federal Funds: \$		Non-Federal funds: \$		Total \$		
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)									
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)									

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.

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET

ORGANIZATION AND ADDRESS Ohio State University Research Foundation 1960 Kenny Road Columbus, OH 43210-1063			USDA AWARD NO. Year 3: 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) Hanping Wang, Laura G. Tiu, and Geoffrey K. Wallat			Funds Requested by Proposer	Funds Approved by CSREES (If different)			
A. Salaries and Wages 1. No. of Senior Personnel			CSREES FUNDED WORK MONTHS				
			Calendar	Academic	Summer		
a. ____ (Co)-PD(s)							
b. ____ Senior Associates							
2. No. of Other Personnel (Non-Faculty)			12		\$47,740		
a. <u>1</u> Research Associates-Postdoctorates ...							
b. ____ Other Professionals							
c. ____ Paraprofessionals							
d. ____ Graduate Students							
e. ____ Prebaccalaureate Students							
f. ____ Secretarial-Clerical							
g. ____ Technical, Shop and Other							
Total Salaries and Wages →					\$47,740	\$0	
B. Fringe Benefits (If charged as Direct Costs)					\$14,656		
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →					\$62,396	0	
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies					\$604		
F. Travel					\$8,000		
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.)					\$3,000		
K. Total Direct Costs (C through I) →					\$74,000	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.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →					\$74,000	0	
N. Other →							
O. Total Amount of This Request →					\$74,000	0	
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$		
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)							
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 OHIO STATE UNIVERSITY

(Wang, Tiu, and Wallat)

- A. Salaries and Wages.** 100% appointment for a Research Associate who will serve as the RAES.
- B. Fringe Benefits.** Annual costs: the Ohio State University fringe benefit rate for a Research Associate is 30.7%.
- E. Materials and Supplies.** Year 1: Lap-top computer with wireless Internet service (\$2,500), miscellaneous office supplies including pens, pencils, staplers, folders, paper, envelopes, printer/copier, ink cartridges, filing systems, organizational systems (\$1,500), and computer supplies such as software, hardware, DVDs, CDs, PDA (\$685). Year 2: Miscellaneous office supplies including pens, pencils, staplers, folders, paper, envelopes, ink cartridges, filing systems, display board, organizational systems (\$1,421). Year 3: Miscellaneous office supplies including pens, pencils, staplers, folders, paper, envelopes, ink cartridges, filing systems, organizational systems (\$604).
- F. Travel.** Year 1: Transportation, lodging, and meal expenses for one trip by Research Associate to each of the 12 NCR states plus one trip to a national meeting at a location to be determined (\$10,000). Year 2: Transportation, lodging, and meal expenses for one trip by Research Associate to each of the 12 NCR states (\$9,000). Year 3: Transportation, lodging, and meal expenses for one trip by Research Associate to each of the 12 NCR states (\$8,000).
- J. All Other Direct Costs.** Year 1: Communication (toll-free number and cell phone) (\$1,200), postage (\$1,000), and video-conferencing (\$1,300). Year 2: Communication (toll-free number and cell phone) (\$1,000), postage (\$1,000), and video-conferencing (\$1,000). Year 3: Communication (toll-free number and cell phone) (\$1,000), postage (\$1,000), and video-conferencing (\$1,000).

SCHEDULE FOR COMPLETION OF OBJECTIVES

Summer 2005: Convene Advisory Committee
Fall 2005: Hire RAES to work on Objectives 1 & 2
Fall 2006: Annual evaluation and meeting with Advisory Committee
Fall 2007: Annual evaluation and meeting with Advisory Committee
Fall 2008: Annual evaluation and meeting with Advisory Committee

LIST OF PRINCIPAL INVESTIGATORS

Hanping Wang, Ohio State University

Laura G. Tiu, Ohio State University

Geoffrey K. Wallat, Ohio State University

VITA

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Phone: (740) 289-2071
Fax: (740) 289-4591
E-mail: tiu.2@osu.edu

EDUCATION

B.S. Silliman University, Philippines, 1987, Biology/Marine Biology
M.S. Mississippi State University, 1990, Wildlife Ecology/Fisheries Management
Ph.D., A.B.D. Ohio State University, in progress, Human and Community Resource Development/Adult Education

POSITIONS

Senior Research and Extension Associate (2003-Present), and Research and Extension Associate for Aquaculture (1998-2003), Ohio State University
Co-Investigator for Aquaculture (1992-1998), and Research Assistant for Aquaculture (1991-1992), Kentucky State University
Technical Assistant (1990), and Graduate Research Assistant (1988-1990), Mississippi State University
Laboratory Technician (1987-1988), Mote Marine Laboratory, Sarasota, Florida
Tropical Fish Breeder (1987), J & B Tropicals, Lakeland, Florida

SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Ohio Aquaculture Association (OAA)
National Association of State Aquaculture Coordinators (NASAC)
United States Aquaculture Society (USAS)
World Aquaculture Society (WAS)

SELECTED PUBLICATIONS

- Wallat, G., Tiu, L., Wang, H.P, Rapp, D., and Leighfield, C. 2005. The effects of size grading on production structure and growth performance of yellow perch in earthen ponds. *North American Journal of Aquaculture* 67:34-41.
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EDUCATION

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POSITIONS

Aquaculture Specialist/Senior Research Associate (2003-present), Research Associate (2000-2003), and Research Assistant II/Facility Coordinator (1998-2000) Ohio State University South Centers at Piketon Graduate Research Assistant (1997-1998). University of Florida General Manager, Operations Manager, Production Manager and Aquaculture Technician (1989-1995), Sea Critters, Inc.

SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

American Fisheries Society
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SELECTED PUBLICATIONS

- Wallat, G., Tiu, L., Wang, H.P, Rapp, D., and Leighfield, C. 2005. The effects of size grading on production structure and growth performance of yellow perch in earthen ponds. *North American Journal of Aquaculture* 67:34-41.
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POSITIONS

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Associate Professor (1993-Present), Assistant Professor (1987-1993), and Research Associate (1984-1986), Department of Aquaculture & Environment, Yangtze River Fisheries Institute (YFI), Chinese Academy of Fisheries Sciences
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SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

Ohio Aquaculture Association
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SELECTED PUBLICATIONS

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