

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

OMB Approved 0524-0039

Expires 03/31/2004

1. LEGAL NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE University of Connecticut		3. NAME AND TITLE OF AUTHORIZED ORGANIZATIONAL REPRESENTATIVE (AOR) Antje Hamisch, Ph.D. Assistant Director, OSP	
2. ADDRESS (Give complete mailing address and Zip Code) University of Connecticut Office for Sponsored Programs 438 Whitney Road Ext., Unit 1133 Storrs, CT 06269-1133		a. Telephone No.: (860) 486-3622	b. Fax Number: (860) 486-3726
		c. E-mail Address: osp@uconn.edu	
5. ADDRESS OF AOR (If different from Item 2.)			
6a. TYPE OF PERFORMING ORGANIZATION (Choose 1 only) 01 <input type="checkbox"/> USDA Agency 02 <input type="checkbox"/> Other Federal Agency/Department 03 <input type="checkbox"/> 1862 Land-Grant University 04 <input type="checkbox"/> 1890 Land-Grant University (including Tuskegee Univ.) 05 <input type="checkbox"/> 1994 Land-Grant University 06 <input type="checkbox"/> Private University of College 07 <input type="checkbox"/> Non-Land-Grant Public University or College 08 <input type="checkbox"/> Private For-Profit 09 <input type="checkbox"/> Private Non-Profit 10 <input type="checkbox"/> Public Secondary School 11 <input type="checkbox"/> State, Local or Tribal Government 12 <input type="checkbox"/> Individual 13 <input type="checkbox"/> Other		6b. In addition, PLEASE CHECK ANY OF THE FOLLOWING THAT APPLY: <input type="checkbox"/> Alaska Native-Serving Institution <input type="checkbox"/> Cooperative Extension Service <input type="checkbox"/> Native Hawaiian-Serving Institution <input type="checkbox"/> Hispanic-Serving Institution <input type="checkbox"/> Historically Black College or University (other than 1890) <input type="checkbox"/> School of Forestry <input type="checkbox"/> State Agricultural Experiment Station <input type="checkbox"/> Tribal College (other than 1994) <input type="checkbox"/> Veterinary School or College	
7. TITLE OF PROPOSED PROJECT (140-character maximum, including spaces) Aquaculture health hazards – developing outreach services to the region's farmers via extension and aquatic animal health professionals, using a HACCP approach			
8. PROGRAM TO WHICH YOU ARE APPLYING (Include Program Area and Number. Refer to Federal Register announcement or program solicitation where applicable) USDA NIFA Northeastern Regional Aquaculture Center TRA-01		9. TAX IDENTIFICATION NO. (TIN) 06-0772160	10. CONGRESSIONAL DISTRICT NO. 2
11. DUNS NO. (Data Universal Numbering System) 614-20-9054		12. PROPOSED START DATE 01/01/2011	13. DURATION REQUESTED (No. of months) 24
14. TYPE OF REQUEST (Check only one) <input checked="" type="checkbox"/> New <input type="checkbox"/> Renewal <input type="checkbox"/> Supplement <input type="checkbox"/> Resubmission <input type="checkbox"/> Resubmitted Renewal <input type="checkbox"/> Continuing Increment <input type="checkbox"/> PD Transfer [PRIOR USDA Award No. _____]		15. FEDERAL FUNDS REQUESTED (From Form CSREES-2004) UConn: \$180,312 Total: \$196,312 (includes University of Maryland account - see budget justification)	
16. PROJECT DIRECTOR (PD) Tessa Getchis		17. PD BUSINESS ADDRESS (INCLUDE DEPARTMENT/ZIP CODE) University of Connecticut Connecticut Sea Grant 1080 Shennecossett Road Groton, CT 06340-6048	
18. a. PD Phone No.: (860) 405-9104	b. PD Fax No.: (860) 405-9109	c. PD E-mail Address: tessa.getchis@uconn.edu	
19. CO-PD(s) NAME Robert Pomeroy		TELEPHONE NUMBER (860) 405-9278	E-MAIL ADDRESS robert.pomeroy@uconn.edu
20. IF THIS IS A RESEARCH PROJECT, WILL IT INVOLVE RECOMBINANT DNA, HUMAN SUBJECTS, OR LIVING VERTEBRATE ANIMALS? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If yes, complete Form CSREES-2008)		21. WILL THIS PROJECT BE SENT OR HAS IT BEEN SENT TO OTHER FUNDING AGENCIES, INCLUDING OTHER USDA AGENCIES? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If yes, list Agency acronym(s) & program(s))	
By signing and submitting this proposal, the applicant is providing the required certifications set forth in 7 CFR Part 3017, as amended, regarding Debarment and Suspension and Drug-Free Workplace; and 7 CFR Part 3018 regarding Lobbying. Submission of the individual forms is not required. (Please read the Certifications included in this booklet before signing this form.) In addition, the applicant certifies that the information contained herein is true and complete to the best of its knowledge and accepts as to any award the obligation to comply with the terms and conditions of the Cooperative State Research, Education and Extension Service in effect at the time of the award.			
SIGNATURE OF PROJECT DIRECTOR(S) (All PDs listed in blocks 16 or 19 must sign if they are to be included in award documents.) 		DATE 2/2/10	
SIGNATURE OF AUTHORIZED ORGANIZATIONAL REPRESENTATIVE (Same as Item 3) 		DATE 2-16-10	
SIGNATURE (OPTIONAL USE)		DATE	

NRAC Project Summary (2010 Solicitation)

Project Title: Aquaculture health hazards – developing outreach services to the region’s farmers via extension and aquatic animal health professionals – using a HACCP approach

Project Status/Duration:

New (Y)

Con’t. _ _ _ _ _

Project Period: 24 months

Name, Address, and Telephone Number of Project Coordinator

Tessa Getchis

Connecticut Sea Grant and Department of Extension

University of Connecticut

Groton, CT 06340-6048

(860) 405-9104

Principal Investigator(s) and Brief Statement of Qualifications:

Tessa Getchis, University of Connecticut

Deborah A. Bouchard, University of Maine

Joseph Buttner, Professor, Salem State College

John Ewart, University of Delaware

Ann Faulds, The Pennsylvania State University

George E. Flimlin, Rutgers University

Doris Hicks, University of Delaware

Craig Hollingsworth, University of Massachusetts

Andrew Lazur, University of Maryland

Dale Leavitt, Roger Williams University

Dennis McIntosh, Delaware State University

Dana L. Morse, University of Maine

Tom Rippen, University of Maryland

Gregg Rivara, Cornell Cooperative Extension

Roxanna Smolowitz, Roger Williams University

Dan Terlizzi, University of Maryland

Don Webster, University of Maryland

Ken La Valley, University of New Hampshire

Diane Murphy, Cape Cod Cooperative Extension & Woods Hole Sea Grant

Robert Pomeroy, University of Connecticut

Josh Reitsma, Cape Cod Cooperative Extension & Woods Hole Sea Grant

Michael A. Rice, University of Rhode Island

Project Objective(s):

Objective 1: To identify, organize and compile science-based information and educational resources about aquaculture health hazards including major diseases of aquatic organisms, pests of aquaculture species, and organisms that cause human illness;

Objective 2: To develop HACCP-style guidelines for monitoring, recording, evaluating and sampling of stocks at the farm level, and to assemble and publish technical information and guidelines as individualized protocols and responses for shellfish and finfish farmers;

Objective 3: To conduct training workshops for extension and outreach practitioners on how to apply the HACCP-type guidelines for the development of a health risk management plan for individual farms;

Objective 4: To implement local industry outreach programs where farmers are instructed on developing their own HACPP health risk plans; and

Objective 5: To complete an economic assessment of the impact of implementing a HACCP plan on individual farms in the northeast region.

Specific Priority(ies) in Solicitation to Which Project Responds: Improved Economic Viability TRA-10-1

Keywords: aquaculture, health, hazards, HACCP

Summary of Work: (for continuing projects, include progress to date)

Project Funding:

	<u>Year 1</u>	%		<u>Year 2</u>	%		<u>Year 3</u>	%
NRAC	\$96,232__	100_____ %	NRAC	\$100,080__	100_____ %	NRAC	\$196,312__	100_____ %
Match	\$_____	_____ %	Match	\$_____	_____ %	Match	\$_____	_____ %
Total	\$96,232__	100_____ %	Total	\$100,080__	100_____ %	Total	\$196,312__	100_____ %

2010 Proposal to the Northeastern Regional Aquaculture Center (NRAC) for USDA Cooperative State Research, Education and Extension Funding

Section 1.1

Proposal Code (See cover letter): TRA-10-1

Project Title: Aquaculture health hazards – developing outreach services to the region's farmers via extension and aquatic animal health professionals, using a HACCP approach

[N] Please circle Y (yes) or N (no) to indicate if the title is the same as the Pre-proposal

Total Funding Requested from NRAC: \$196,312 **Total Match:** \$

Project Duration (total): 24 Months

Resubmission Information: _____

[If this proposal is a resubmission from (a) previous year(s), please give the year(s) submitted and whether a preproposal (PP) and a Full Proposal (FP) were submitted.]

Preferred Start Date (circle/list): (funding will be available about July 2010) January 1, 2011

States with Participants in Project (circle/list):

CT DE ME MD MA NH NJ NY PA RI

Project Coordinator (Lead Principal Investigator) (one name only)

(name/position/address/phone/fax/Email):

Tessa Getchis
Connecticut Sea Grant and Department of Extension
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(860) 405-9104/ fax (860) 405-9109
tessa.getchis@uconn.edu

Does this Project Request rental for space or use fees Yes (venue for workshops)

If yes the institutions authorized signature on this proposal attests that this space rental or these fees are not included in the institution's normal over head calculations.

Project Coordinator's Signature:

Tessa Getchis

Date: 02/02/10

University Approving Official:

Antje Hamisch **Date:** 2-16-10

Antje Hamisch, Ph.D.
Assistant Director, OSP

Section 1.2

Principal Investigator(s) (name/position/address/phone/fax/Email):

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Section 2

2.1 Objectives (itemize)

This section should present a clear, complete and logically arranged statement of the project's overall objectives and related specific objectives. Use a clear, concise, one-sentence statement for each objective and arrange in a logical sequence.

- Objective 1: To identify, organize and compile science-based information and educational resources about aquaculture health hazards including major diseases of aquatic organisms, pests of aquaculture species, and organisms that cause human illness;
- Objective 2: To develop HACCP-style guidelines for monitoring, recording, evaluating and sampling of stocks at the farm level, and to assemble and publish technical information and guidelines as individualized protocols and responses for shellfish and finfish farmers;
- Objective 3: To conduct training workshops for extension and outreach practitioners on how to apply the HACCP-type guidelines for the development of a health risk management plan for individual farms;
- Objective 4: To implement local industry outreach programs where farmers are instructed on developing their own HACPP health risk plans; and
- Objective 5: To complete an economic assessment of the impact of implementing a HACCP plan on individual farms in the Northeast region.

2.2 Justification

Present a statement of the problem and its background, the extent of the problem, and the importance of the expected results to the aquaculture industry.

Each year, the aquaculture industry experiences significant economic losses as a result of vectors that cause disease, pests that render product unmarketable and closures of harvest areas due to the presence of organisms that cause human illness. Collectively, we will refer to these as “health hazards” in aquaculture. Massive mortality of farmed product and human illness caused from ingestion of contaminated product adversely impacts profitability, trade, and public perception.

Inadequate farm level monitoring, record keeping, and producer knowledge of risk factors can confound experts’ abilities to properly identify, diagnose and/or respond to the threat of aquaculture health hazard issues. Frequently, the cause of mortality events remains unknown or is identified only when it is too late to control or correct. Often, key pieces of information are missing from farmers’ requests to identify and correct the health hazard/issue, making the response from the extension and aquatic health professional community, at best, highly speculative.

Extension and outreach practitioners lack comprehensive guidelines, tools, and training to assist aquaculture farmers with implementing a protocol to monitor, record, evaluate and sample stocks at the farm level. Information that would help veterinarians and pathologists better address mortality events is subsequently nonexistent or unavailable. In addition, industry lacks adequate widely available and easily accessible information to help them understand and minimize the risk factors associated with pathogenic organisms, pests of aquaculture species, and/or human health threats resulting from consumption of contaminated product.

Previous NRAC projects and those supported by other agencies have identified the causes of many major diseases, husbandry methods and diagnostic tools to aid in their prevention and treatment, and determined the efficacy of disease-resistant or tolerant stocks. In addition, guidelines have been developed to address these risks through the implementation of best management practices and biosecurity measures (e.g., recently completed BMPs for the East Coast shellfish growers). However, the results of those research and outreach efforts need to be compiled and integrated into a widely available, readily accessible, and user-friendly format to be fully utilized by industry. Continuing and expanding NRAC's commitment to addressing aquaculture disease issues, we propose to develop a comprehensive outreach program with written protocols containing up-to-date and science-based information about major diseases of aquatic organisms, pests of aquaculture species, and organisms (e.g. toxic algae or pathogenic bacteria, such as *Vibrio*) that cause human illness, as well as guidelines for monitoring, recording, evaluating and sampling of stocks at the farm level. We propose to develop appropriate response measures using a "Hazard Analysis and Critical Control Points (HACCP)" approach to prevent the spread of fish and shellfish diseases and occurrences of human illness. In doing so, we hope to engage all of these stakeholders in planning for and managing aquaculture hazards in the Northeast U.S.

2.3 Related Activities and Other Work

Present a brief review, using information from Current Research Information System (CRIS) reports (CRIS website: <http://cris.csrees.usda.gov/menu.html>), published literature and other sources of related research on the problem, how it falls short of meeting current and future requirements, and how the proposed work will supplement and extend our understanding towards a solution of the problem. Essential literature citations shall be listed at the end of this section under the heading Literature Cited. If it is for a continuing project, include progress to date.

The seven HACCP risk management methodologies that were first developed for the food industry have been successfully applied to natural resources management to prevent the spread of aquatic invasive species (AIS). The principles can be used to anticipate, identify, and prevent many of the potential fish and shellfish and human health hazards in aquaculture operations before they occur. The HACCP approach takes farmers, extensions agents, aquatic health specialists and regulators through a step-by-step process to set up biosecurity measures for specific facilities through the application of common HACCP principles. HACCP training programs provide farmers with the necessary tools to develop appropriate hazard management or HACCP plans for their facilities.

Gall and Rivara (2005) used HACCP to outline food safety issues that are important to aquaculture farmers and laid the groundwork for building plans to prevent fish health hazards. The National Seafood HACCP Alliance (2008) developed a training and curriculum compendium focusing primarily on eliminating human health hazards from seafood. The HACCP Planning for Natural Resource Pathways (USFWS-NCTC, 2004) is designed for preventing invasive species, but includes potential fish and shellfish health hazards. The natural resources manual was developed based on the National Seafood HACCP Alliance training materials and curriculum (Seafood HACCP Alliance 2001) and adapted from the work of Jeff Gunderson and Roy Kinnunen from the National Sea Grant Program. The manual lists many different HACCP type plans and documents that have been created across the country and these documents can be used as models to assist in training as is executed in the National Seafood HACCP Alliance training courses. (See <http://www.haccp-nrm.org/listplansbycat.asp> for a list of these plans.) This site includes a link for a trout farm management plan (<http://www.haccp->

nrm.org/Plans/TN/Trout_HACCP_Plan.pdf) that will serve as an example of a model that could be adapted for our training purposes. This model HACCP plan (including the hazard analysis) lists several trout biologics (potential diseases) as potential hazards in their Hazard Analysis and then go on to develop the HACCP plan and include these hazards at Critical Control Points. Lastly, they describe the other parts of the HACCP Plan to prevent/control these potential hazards. The HACCP Plan itself lists the steps to take to prevent or minimize the risk of these potential hazards from happening. In addition, a model flow-through HACCP system for trout was developed by the National Seafood HACCP Alliance (2008).

It is these HACCP programs that will be used as a template for managing aquatic health hazards to prevent both shellfish and finfish disease and human illnesses in the Northeast U.S. Once farmers, extensions agents, aquatic health specialists and regulators understand the principles of HACCP, they will be able to apply them to any type of grow-out system and species, in the same manner that seafood processors apply the principles to their own individual operations and facilities.

2.4 Proposed Methods and Activities

This section should describe what the investigators propose to do, including milestones to be achieved, for each of the stated objectives as listed above in Section 2.1. There should be a numbered statement of procedure to correspond with each numbered objective. Describe the work plans (experimental design where appropriate) and methods to be used in attaining each stated objective. The responsibilities and work assignment of each participating investigator must be stated in the procedure for each objective. Sufficient information should be included to enable the reader to evaluate the approach and to discern joint planning and coordination by the cooperating investigators, possible pooling of data, regional summarization of findings, and plans for publications, extension education, and outreach program(s).

We propose to develop protocols to address animal and human health hazards confronting both shellfish and finfish aquaculture operations in the Northeast U.S. using a Hazard Analysis and Critical Control Point (HACCP) approach. HACCP principles can be used to anticipate, identify, and prevent many of the potential fish and shellfish health hazards in aquaculture operations. Using a HACCP approach to managing risk has become an accepted method in a number of aquaculture applications, including prevention of Aquatic Invasive Species transport in the baitfish industry (Gunderson and Kinnunen 2001) and for managing disease risks in shrimp and other culture facilities (Garrett *et al.* 1997). Our approach will be to utilize the HACCP process to allow aquaculture industry members to minimize the risk of health hazards to their farming operation through analysis of potential risks and development of a management plan to minimize those risks.

HACCP was developed in the late 1950s and early 1960s as a way to ensure safety of food produced for the space program (Sperber and Stier 2010). HACCP is a system of control that requires that a hazard analysis be conducted for a species and its production. Critical Limits (CL) are then established at each Critical Control Point (CCP) in the production. A set of “real time” parameters are monitored to maintain the health and safety of the species. The seven principles of HACCP are:

1. Conduct a hazard analysis;
2. Determine the Critical Control Points;
3. Establish critical limits;
4. Monitor each Critical Control Points;
5. Establish corrective actions;

6. Establish verification procedures; and
7. Establish record keeping and documentation procedures.

Written “protocols” developed through the HACCP generating process in this project will include science-based guidelines for monitoring, recording, evaluating and sampling of stocks along with methods for recording observations for future reference. We will provide guidance on what environmental parameters (e.g. temperature, salinity, turbidity, dissolved oxygen, hydrographic and weather conditions, observations of blooms and other atypical events) should be monitored, how and when they should be measured, who to contact when a problem occurs, where and how to send samples, and what is an adequate strategy for documenting and following-up on mortality events. The assembled protocol will include a general overview of each major disease/pest affecting aquatic organisms in the Northeast, the signs and symptoms of infection and causative agent and will provide scientifically proven methods (when available) for prevention and treatment of such diseases. The technical information contained in these protocols will be drawn from research and outreach studies and publications to avoid duplication of effort. Relevant requirements for food safety (e.g. traceability, recall and food security concerns) will be addressed. A train-the-trainer program will educate outreach professionals including extension, aquatic health professionals and resource managers on how to utilize the protocols and those individuals will collaborate to offer industry outreach workshops to educate growers on implementation of the protocols at the farm level, regardless of the type of system used.

Objective 1: To identify, organize and compile science-based information and educational resources about aquaculture health hazards including major diseases of aquatic organisms, pests of aquaculture species, and organisms that cause human illness

Two teams (finfish/shellfish) have been assembled to compile technical information on aquaculture hazards. Technical information to be compiled will consist primarily of published resources including peer-reviewed journal articles, final reports produced as part of NRAC and other research efforts, and state research and extension materials. Each team will conduct a directed literature review and will consult with researchers, aquatic health professionals and resource managers as to the best material for inclusion. A preliminary description of appropriate literature would focus on:

- relevance of the information to identified health hazard risks in the Northeast,
- capacity of the information for direct application to a farmer’s needs,
- use of appropriate graphics to relay information directly to the farmer.

In addition to identifying the most up-to-date information on health hazard risk management in the Northeast U.S., and from other regions when applicable to the Northeast, the teams will use the information compiled to identify data gaps to guide future research directions for NRAC and other funding agencies. The literature review is not meant to be a product, but rather a means for acquiring the most up-to-date science-based data to be used in the formation of industry protocols as addressed in Objective 2.

Two areas where information is lacking have been identified during the development of this proposal. As part of Objective 1, we propose to develop two technical bulletins to address these needs. The first publication will be a NRAC Technical Bulletin that outlines appropriate

measures for a shellfish farmer to implement when a problem occurs on his/her farm. A publication targeted towards the shellfish industry, entitled "*Dead and Dying-What Do I Do?*", will be developed. The publication will examine vectors that could impact various shellfish species and will assist the farmer in understanding what diseases, predators, and pests could cause crop mortalities. It will show how to sample the crop to collect random samples of dead, dying and living shellfish which can be analyzed by aquatic animal veterinarians or pathologists. It will describe methods to handle, store, fix if needed, and ship specimen for analysis. The Technical Bulletin will complement bulletins previously published by NRAC (NRAC Bulletins #111, 112, and 106-2008) that address similar issues with finfish. The proposed bulletin will also examine options for handling the crop if large mortalities do occur and how to relate these issues to other farmers and various state agencies (Agriculture, Fish and Game, Health, etc.). Lastly, it will suggest Best Management Practices for these actions based on the East Coast Shellfish Growers Association Code of Practice for shellfish farmers or other relevant best management practices/biosecurity documents.

A second bulletin will be developed, entitled "*What Do I Need To Know About My Culture Site*" that will include a standardized data sheet for recording site conditions under normal circumstances and when confronted with a suspected health hazard situation. The bulletin will provide instructions on how to collect the data required. The development of a standardized descriptive process for characterizing a farm site will consist of site conditions identified by aquatic health professionals as critical to the identification of aquatic health hazards.

Objective 2: To develop HACCP-style guidelines for monitoring, recording, evaluating and sampling of stocks at the farm level, and to assemble and publish technical information and guidelines into individual protocols for shellfish and finfish aquaculture

HACCP principles (listed above) can be used to anticipate, identify, and prevent many of the potential fish and shellfish health hazards encountered in aquaculture operations. Ultimately, a farm operator will be guided through these steps (principles) to develop a hazards management plan that will be unique to her/his operation and geographical location and will address all of the significant risks to animal and human health that they may encounter in their business. Objective 2 is comprised of two parts that will allow for a farmer to utilize a HACCP Hazards Management procedure.

The first task in implementing a HACCP approach to health risk management on the farm is to analyze our current state of knowledge on the predetermined health hazards. Part 1 of this objective is the development of a two documents (finfish/shellfish) outlining all of the significant animal and human health hazards associated with aquaculture. This is based on the literature search conducted under Objective 1.

Following the literature analysis, a summarization of our current knowledge of the risks, a description of the critical control points for dealing with that risk and management procedures that can be implemented to minimize the risk will be compiled for each risk. Part 2 of this objective is to develop a common template for the document will be developed. The writing of the template will be undertaken using a model similar to that used to develop the Seafood HACCP Manual currently in use. That entails a two-day group workshop (to be held in Summer 2011) where the project teams will meet. Best Management Practices and biosecurity measures that have resulted from previously-funded NRAC projects (as well as those funded by NOAA

and other agencies) that are relevant will be reviewed and incorporated into the risk management procedures.

From that common template, two protocols (finfish/shellfish) will be assembled for farmers to utilize to address a specific hazard using the seven principles of HACCP. The protocols will include science-based guidelines for monitoring, recording, evaluating and sampling of stocks along with methods for recording observations for future reference. The protocols will include guidance on what environmental parameters (e.g. temperature, salinity, turbidity, dissolved oxygen, hydrographic and weather conditions, observations of blooms and other atypical events) should be monitored, how and when they should be measured, who to contact when a problem occurs, where and how to send samples, and what is an adequate strategy for documenting and following-up on mortality events. Guidelines will be designed so that they are easy and inexpensive to implement at the farm level, while providing the necessary information for experts to use in identifying the cause of a hazard event.

Subsets of the teams will be assigned the task of writing and editing hazard-specific narratives developed according to the accepted template. Additional resources to assist in the development of risk management plans include: Otwell and Garrido, 1995a, Otwell and Garrido, 1995b, Hood and Flick, 1995 and Kebus 2005. Recognized aquatic veterinarians and health professionals will be asked to review hazard-specific narratives that are germane to their area of expertise. Such reviewers will be recruited from all regions of the U.S. and requests for their input will be based on the need for knowledge of the subject area/disease addressed in the writing. At the end of the workshop, a first draft of the HACCP Guidelines will be ready for final information gathering and editing. It is anticipated that the document will be ready for external review by the end of 2011. It is important to note that these Guidelines will be developed for the two primary sectors of aquaculture in the Northeast, i.e. shellfish and finfish farmers. There will be separate sections that will deal with the specific risks for each sector.

The two-step approach will take farmers, extensions agents, aquatic health professionals and regulators through a step-by-step process to set up control measures for individual farmers and their facilities. Use of the seven HACCP principles will allow farmers to build a plan to keep their fish/shellfish healthy and to minimize the risk of hazards to consumers. Developing a hazards management plan is not a mandatory process, it is a voluntary process that helps farmers, with the assistance of extension and regulatory staff, to improve their farming techniques through good practices.

We envision the end-product – a Hazards Manual for Northeast Aquaculture Farmers – as both a virtual and printed document. The first section of the document will consist of the educational documents that identify the aquatic health hazards and the technical bulletins generated through this project, while the second section will contain the protocols assembled to manage risk and respond to mortality events.

Objective 3: To conduct training workshops for extension and outreach practitioners on how to apply the HACCP-type guidelines for the development of a health risk management plan for individual farms.

Following the development of the “Hazards Manual for Northeast Aquaculture Farmers,” a process will need to be developed to allow a farmer to work through the seven principles of Hazards HACCP. This will be achieved through a two part process – a train-the-trainer session and industry outreach workshops.

Prior to the implementation of the training session, we will conduct a focus group evaluation for finfish and shellfish hazards to pre-test the implementation of the guidelines and training developed under Objective 2. Each focus group will consist of five people including farmers, regional aquaculture extension agents, aquatic animal health professionals, including nationally recognized aquatic veterinarians and disease researchers, and regulators/resource managers. The role of the pre-testing by focus group is to judge the efficacy of the guidelines training and to test training strategies. Feedback from the focus groups will allow us to fine tune the training approach to ensure that the goals of the training are met, namely to provide guidance to outreach practitioners on implementation of the Hazards HACCP planning process at individual farms.

Following the focus group assessment, a training session for the regional aquaculture extension agents, aquatic animal health professionals, and regulators/resource managers will be achieved through a two-day workshop, including both finfish and shellfish hazard sessions. Each training session will review information about major diseases of aquatic organisms, pests of aquaculture species, and organisms that cause human illness. The HACCP Principles will be introduced and participants instructed on how to undertake a hazards assessment and develop a management plan, using the guidelines and information developed under Objective 2. The workshop will draw on the expertise of disease pathologists, veterinarians, food safety experts and other hazard professionals. In addition to the technical information, the workshop will develop strategies to outreach these protocols containing technical information and guidelines to the aquaculture industry at a local level. The workshops will be videotaped and archived on the NRAC web site.

Video clips of hands-on methods and procedures included in the animal health workshops will be used to document these practices and will be integrated into the NRAC extension web-based educational materials. These provide useful methods of showing techniques that can be used by industry practitioners in the conduct of their businesses. These will not include lengthy or general lecture material but rather specific practices that can be incorporated into the business. Evaluation procedures for these will be assessed to assure that the material is relevant and useful to industry and used to better select material and methods for additional videos in future projects.

Proposed structure for the Training Workshop

1. Knowledge Pre-test
2. General nursery and grow out processes
3. Principals of animal husbandry
4. General overview of aquaculture diseases
 - Implications for crop success
 - Manifestation of disease in crop
 - Impact on other farmers or wild stocks
5. Overview of predators, pests and biofouling
 - Impact on culturing
 - Protection from predators/pests
 - Biofouling treatment methods
6. Education about human health issues
 - Bacteriological and viral pathogens
 - Impact on human health
7. Post harvest handling
 - Storage

- Distribution
- 8. Hazards HACCP Introduction
 - Conducting a Hazards HACCP analysis
 - Following the Guidelines for addressing critical control points and associated risks
 - Implementing the seven steps of HACCP
 - Development of Best Management Practices for Individual Farms
- 9. Protocol for dead or dying fish or shellfish
 - Identification
 - Sampling
 - Handling
 - Preparation/packing for shipment
 - Notification for other farmers, agencies
 - Disposition of moribund animals
- 10. Knowledge Post Test

Included in the session will be a hands-on laboratory section, hosted by aquatic animal health specialists, that will train participants in methodologies of collecting samples both for rudimentary analysis and for more sophisticated analysis such as virology and molecular assay. This train-the-trainer event will be held in conjunction with the Northeast Aquaculture Conference and Exposition meeting that will be held in December 2012.

Objective 4: To implement local industry outreach programs where farmers are instructed on developing their own HACCP health risk plans

Based on the outreach planning developed at the Training sessions, the teams will implement a series of local workshops, organized and managed by individual extension personnel, to provide the information and materials developed in the context of this project to local farmers. The local workshops will be directed at farmers, but may include local regulators and animal health specialists.

The goal of the workshops is to familiarize growers with the “Manual” and to instruct them on how to implement of the HACCP-style protocols at the farm level. The end result of the HACCP process is the development of a farm-specific hazards monitoring plan with associated record-keeping. Included in the plan are appropriate response procedures in the event of a real problem and methods to modify the plan as needed to address changes in the farm or inadequate management protocols. The workshop participants will be offered the opportunity to address a real or hypothetical hazard using the HACCP-style protocols.

The efficacy of the training and local outreach workshops will be assessed using a pre- and post-workshop questionnaire, to measure the immediate transfer of information. The assessment will be followed up with a longer-term post-workshop survey to assess the application of the materials presented to the workshop participants.

Objective 5: To complete an economic assessment of the impact of implementing a HACCP plan on individual farms in the northeast region.

Financial risk analyses focus primarily on profitability indicators. Financial profitability can be measured in a variety of ways, including profit (net revenue or net income), return on

production inputs (e.g. capital, water, land and labor), profit margin, return on investment (ROI) and internal rate of return (IRR). In order to measure profitability, a careful accounting of the costs is needed. When estimating the financial cost of a hazard, it is necessary to identify the fixed costs and variable costs. The distinction between fixed and variable costs is useful when conducting partial budget analyses.

We propose to conduct an economic impact analysis of the protocols to address health hazards confronting both shellfish and finfish aquaculture operations of varying sizes. The economic impact analysis will use enterprise budgets and partial budgeting as the economic methods. The enterprise budget is a process of estimating costs and returns for a particular production practice. Partial budgeting is used to evaluate expected changes in costs and returns by introducing some change into the production system.

For this analysis, enterprise budgets will be developed for four selected shellfish and finfish aquaculture operations who have offered to test the aquatic health hazards protocols. The enterprise budget contains all levels of output and their expected price, as well as the level of all inputs and their costs for that enterprise, including the current costs for addressing health hazards. The partial budget analysis will be used to evaluate the impacts on costs and returns on each enterprise due to the change associated with the introduction of protocol to address health hazards. One or multiple partial budget analyses may be undertaken for the enterprise depending upon the number of protocols in order to compare and determine the most cost effective protocol. Break-even analysis will be used to calculate the production level and sales price at the break-even point at which sales revenues equal production costs. Since some key variables in the analyses face different degrees of uncertainties; sensitivity analyses are carried out to examine the robustness of the results of these variables. Pomeroy and University of Connecticut graduate student will make two visits to each farm to collect budget information and discuss use of current hazard management methods and the new NRAC aquatic health hazard protocols and how such methods have affected the operation's budget. This information will allow us to enumerate the economic impact (losses minimize, cost-savings, increased revenues) of the end-product of this project.

2.5 Project Schedule

This schedule interrelates with all project milestones and objectives on a common time scale (shown in months). The project schedule (bar chart or Gantt chart) should contain the following information:

1. Milestones that will be achieved during the project (link with stated objectives);
2. Names of the individuals responsible for each milestone;
3. Starting date, expected duration, and completion date for each milestone;
4. Completion date for each numbered objective

Although multiple-year projects are approved for the duration of the project, and total project funds are appropriated when the project is approved, funding for each year (after year one) is only released annually, after a public presentation and a favorable review of the progress, performance and merits of the project and approval of a detailed Annual Progress Report.

Year 1: 01/01/11 - 12/31/11	J	F	M	A	M	J	J	A	S	O	N	D
Annual Meeting: Prof. Dev. on HACCP Approach	X											
Literature review	XXXXXXX											
Develop "HACCP" approach template				XX								
Draft individual "HACCP" plans, Mtg 06/21-06/22						XXXX						
Economic Analysis – Initial Farmer Meetings						XXXX						
HACCP plan development									XXXXXXX			

Year 2: 01/01/12 - 12/31/12	J	F	M	A	M	J	J	A	S	O	N	D
Annual Meeting: HACCP plans- Internal Review	X											
“HACCP” plans-External Review, 1 st revision		XXXXXXX										
Economic Analysis – Follow-up Farmer Meetings							XXXX					
Focus groups (pilot finfish, pilot shellfish)								X				
“HACCP” plans-2 nd revision, publish									XXXXXXX			
Train-the-Trainer Session @ NACE												X
Presentation of results of pilot @ NACE												X
Shellfish Outreach 1 (central): Connecticut												X
Shellfish Outreach 2 (north): Maine												X
Shellfish Outreach 3 (south): Maryland												X
Finfish Outreach 1 (south): West Virginia												X
Finfish Outreach 2 (central): New York/ Penn												X
Finfish Outreach 3 (north): Maine												X

Tessa Getchis will be responsible for coordinating the work plan, tracking progress, hosting the training workshop, and coordinating layout, design and evaluation of the outreach documents. Sea Grant Staff at the University of Connecticut will be responsible for grant fiscal management and assisting with meeting and travel arrangements.

The Shellfish Working Group will be co-led by Dale Leavitt and Gef Flimlin. Leavitt and Flimlin have extensive experience in this area and will be responsible for assembling materials associated with shellfish hazards. Those contributing to the development and review of this protocol include: Ewart, Getchis, LaValley, Morse, Murphy, Rice, Rivara, and Webster. Craig Hollingsworth will lead the Finfish Working Group. Hollingsworth has considerable experience in editing, development of protocols and best management practices, and will be responsible for assembling materials associated with the finfish component. Those contributing to the development and review of these protocols include: Bouchard, Buttner, Faulds, Lazur, McIntosh, and Reitsma. Other crosscutting topic areas will be incorporated into both protocols. Dan Terlizzi will be responsible for compiling information on Harmful Algal Blooms. Doris Hicks and Thomas Rippen will coordinate with the Shellfish and Finfish Working Groups to incorporate food safety topics as appropriate. Robert Pomeroy will assist with economic assessment.

Roxanna Smolowitz will serve as the aquatic animal health advisor to the project and assist with developing the content and format of the protocols. Dr. Smolowitz is a member of the American Veterinary Medical Association’s Aquatic Animal Health Committee and is a liaison on that committee to the National Aquatic Animal Health Taskforce. She will be able to keep those committees informed and updated on the progress of this grant and can request informational help as needed. In addition, she will select a group of industry members and peers with experience in the following areas: aquatic animal health, physiology, genetics, harmful algal blooms, and food safety to serve as external reviewers.

John Ewart will be responsible for updating of the NRAC website and for transferring the protocols for shellfish and finfish disease into web-compatible formats for open access.

2.6 Anticipated Products/Outcome

Briefly describe what "deliverables" are expected from this project and budget accordingly (e.g. DVDs [eight submasters and 50 CD/DVD required]; 100 copies required of: fact sheets, extension bulletins, special reports, etc.).

Specifically state who is responsible for these contributions (note: an electronic copy of all publications will be required). Project must include avenues of information/outreach (publications, workshops, extension activities, website contributions, etc.) and how the products of this project will be delivered to, used by, or serve to support the aquaculture industry of the northeastern U.S. For assistance, contact NRAC at 301-405-6085.

The end-users of the products developed will ultimately be the aquaculture farmers in the Northeast region. The pathway to the farmers will be through education and training for extension professionals, aquatic animal health professionals, resource managers/regulators, and other individuals serving in an outreach capacity with the shellfish and finfish aquaculture industry. The training provided to these audiences will subsequently be transferred to the industry through individual contacts and organized local workshops.

To ensure the relevance of the materials developed, an Advisory Group, consisting of four representatives from the aquaculture production sector along with four technical advisors, will be formed. The members of the Advisory Group will be split evenly between shellfish and finfish interests. The role of the Advisory Group is *a priori* to identify the suite of hazards to be addressed within this project and *a posteriori* to review materials developed by the project as to its relevance and effectiveness in transferring good science-based information to the potential users of that information.

Health hazards in the aquaculture industry, regardless of whether the risk is for the cultured product or for the consumer, can potentially impact overall farm production or marketability of the product. Regardless of the root cause of the impact, the bottom line is that profitability on the farm can be negatively affected. For example, a recent outbreak of a significant shellfish disease (QPX) occurred due to improper transport of potentially infected shellfish from a nursery site to an uninfected growout site in Wellfleet, MA. While the transport was allowed under state regulations, the action would have been disallowed if the farmers were following reasonable biosecurity measures. The overall impact on the three farmers involved was the voluntary destruction of more than 1 million quahogs valued at hundreds of thousands of dollars (Frazer 2004). With better guidance or foreknowledge, this event could have easily been avoided; thereby, eliminating a severe economic hardship that was self-imposed on the farmers involved.

Given the wide definition of health hazards used in this proposal, it is difficult, if not impossible, to put a value on the overall economic impact of improper health risk management in the aquaculture industry in the northeast. Numerous examples of economic losses can be cited, similar to that described above, in all sectors of the northeast aquaculture industry. From Viral Hemorrhagic Septicemia in fish to the human health risk of *Vibrio vulnificus/parahemolyticus* in shellfish, the aquaculture industry must be constantly aware of and guard against the occurrence of these hazards. Without the proper information and the availability of recommended procedures to minimize these risks, the northeast aquatic farmer is at a distinct disadvantage in the local, national and global markets for seafood. We propose to give our farmers tools that they can immediately implement to reduce their potential losses and to make them more competitive in the global marketplace.

We anticipate that, as a result of this project, extension professionals, aquatic animal health professionals, resource managers/regulators, and other individuals serving in an outreach capacity will possess a new tool to assist farmers in identifying and managing for aquaculture health hazards. This key information will help aquatic animal health professionals to better and more efficiently respond to mortality events. If the causes of mortality are identified quickly and definitively, losses from mortality may be able to be minimized and/or prevented in the future, leading to improved production and profitability.

In addition, and as a result of this project, farmers will have access to a comprehensive *easy to access* document network containing science-based information and educational resources to help them understand the risk factors associated with aquaculture health hazards. Improved knowledge of these hazards may lead to better risk management strategies and minimization of product losses. Potential economic benefits are significant since operators who are proactive in allaying health concerns related to their products will have a competitive advantage in the marketplace.

We will specifically measure impacts (long, medium and short-term) in the following manner:

- Record # of attendees (focus groups, training workshops, NACE presentation, outreach workshops) (Objectives 3, 4)
- Identify increase in knowledge (use of educational materials, attending workshop) (pre-/post-test) (Objectives 3, 4)
- Identify change in practices as a result use of Hazards Manual for Northeast Aquaculture Farmers,” (follow-up with industry outreach workshop participants through time) (Objective 4)
- Enumerate economic impact of end product (average mortality pre/post use of Hazards Manual for Northeast Aquaculture Farmers,”) through pre/post survey (Objective 4)
- Enumerate economic impact of end product (losses minimize, cost-savings, increased revenues) through economic assessment (Objective 5)

Literature Cited:

Frazer, D. (2004). Troubled waters in Wellfleet. *Cape Cod Times*. Dec 18, 2004.

Gall, K. and G. Rivara (2005) HACCP Guide For The Aquaculture Industry. NRAC publ. 00-005.

Garrett, E.S., Lima dos Santos, C. and M.L. Jahncke. (1997). Public, animal, and environmental health implications of aquaculture. *Emerging Infectious Diseases*. 3:453-457.

Gunderson, J.L. and R.E. Kinnunen (eds.) (2001). ANS-HACCP: aquatic nuisance species, hazard analysis and critical control point training curriculum. Minnesota Sea Grant, University of Minnesota, Duluth, MN. 78 pp.

Hood, A.F. and G.J. Flick. (1995). [Total quality assurance and hazard analysis critical control point manual for the catfish processing industry. Virginia Sea Grant VSG 95-05. 119 pp.](http://nsgl.gso.uri.edu/vsgcp/vsgcph95001.pdf)

Kebus, M. (2005). Aquaculture Fish Health. IN Malison and Harleb (eds.) Aquaculture Best Practices in Wisconsin and the Great Lakes Region. Univ. of Wisconsin Sea Grant. 125 pp. <http://aqua.wisc.edu/publications/PDFs/AquacultureBMP.pdf>

National Seafood HACCP Alliance. (2001). HACCP: Hazards Analysis Critical Control Point Training Curriculum (4th Ed.) http://seafoodhaccp.cornell.edu/manuals_pdf.html

National Seafood HACCP Alliance. (2008). Compendium of Fish and Fishery Product Processes, Hazards, and Controls. <http://www-seafood.ucdavis.edu/haccpalliance.html>.

Otwell , W.S. and V. Garrido. (1995a). Total quality assurance (TQA) and hazard analysis critical control point (HACCP): manual for clam production and processing. Florida Sea Grant. 50 pp. <http://nsgl.gso.uri.edu/flsgp/flsgph95002.pdf>

Otwell , W.S. and V. Garrido. (1995b). Total quality assurance (TQA) and hazard analysis critical control point (HACCP): manual for oyster production and processing. Florida Sea Grant. 56 pp. <http://nsgl.gso.uri.edu/flsgp/flsgph95001.pdf>.

Sperber, W.H. and R.F. Stier. "Happy 50th Birthday to HACCP: Retrospective and Prospective". *Food Safety Magazine*. December 2009-January 2010. pp. 42, 44-46.

U.S. Fish and Wildlife Service. (2004). HACCP planning for natural resource pathways. USFWS-NCTC. <http://training.fws.gov/EC/Resources/pdf/HACCP%20Manual.pdf>

2.7 Supporting Facilities

A statement of facilities to be used should be given for each objective listed in Section 2.1; statements should be numbered to correspond to their respective objectives. Describe the facilities available, the institutional location of each facility, and specific procedures to be conducted at that location. Sufficient information should be included to enable the reader to assess the suitability of facilities, to discern alternatives considered, and to evaluate the joint planning and coordination by the participating investigators. [Reminder: USDA does not allow overhead costs, tuition, indirect costs, and brick and mortar expenditures.]

This project is a collaborative effort among shellfish and finfish extension specialists throughout the Northeast region. The project will be coordinated from the University of Connecticut. The products resulting from this project will be applicable throughout the region and may serve as a template for other regional aquaculture centers.

Section 3

3.1 Budget (Schedules A Form and Section J Worksheet)

The Project Coordinator shall provide a budget for each year of the project (matching funds are not required, but if included they need to be shown in the budget) and a summary budget for the project showing total funding requested from NRAC for each line item (and total matching funds). Budgeted line items must reflect programmed expenditures needed to implement the activities enumerated in Sections 2.4, 2.5 and 2.6. Also include in the budget, estimated funding for the presentation of project results in an NRAC-sponsored public forum. Use Schedule A (form CSREES-2004 Budget) and Section J—All Other Direct Costs Worksheet (Optional) which are provided under the Attachments section of this document. Schedule A (Form CSREES-2004) and Instructions for completing Form CSREES-2004 are provided by the USDA and must be followed, as proposals accepted by NRAC are submitted to the USDA for final approval.

For those projects meeting final approval, a subcontract will be issued to the Project Coordinator's institute, which will issue subcontracts to the PI's of the project. PI's who do not desire a separate subcontract from the Project Coordinator's institute should incorporate their budget information in another PI's budget.

Principal Investigators submitting separate budgets shall submit a budget for each year of support (circle appropriate year in the upper left corner of Schedule A) and a cumulative budget for multi-year funded projects (circle "T" for "total" in the upper left corner of Schedule A). Additionally, the Project Coordinator must include a summary budget for each year of requested project funding and a grand total budget (cumulative summary) for the full term of requested support for all participants in the total project. Enter the grand total of requested NRAC funding (CSREES-2004 Budget Item O. "Total Amount of This Request") and if included the grand total match funding (CSREES-2004 Budget Item Q. "Cost Sharing/Matching") on the Cover Page.

*** Note: Indirect costs (overhead), tuition remission, and capital expenditures are not allowed and may not be included in matching funding.**

OFFICIAL BUDGET PROVIDED IN ATTACHED EXCEL SPREADSHEET

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

OMB Approved 0524-0039

BUDGET

ORGANIZATION AND ADDRESS University of Connecticut PROJECT DIRECTOR(s) Tessa Getchis - YEAR 1 BUDGET UCONN (01/01/2011-12/31/2011)				USDA AWARD NO:			
				DURATION PROPOSED MONTHS: 12 Funds Requested by Preparer	DURATION PROPOSED MONTHS: ____ Funds Approved by CSREES (if different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-Federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS					
1. No. of Senior Personnel		Calendar	Academic	Summer			
a. 1 (Co)-PD(s)		1.32			\$7,741		
b. Senior Associates							
2. No of Other Personnel (Non-Faculty)							
a. Research Associates/Postdoctorates							
b. Other Professionals							
c. 1 Paraprofessionals		0.24			\$1,433		
d. 1 Graduate Students		40 hrs/wk			\$12,924		
e. Prebaccalaureate Students							
f. Secretarial-Clerical							
g. Technical, Shop and Other							
Total Salaries and Wages					\$22,098		
B. Fringe Benefits (If charged as Direct Costs)					\$4,360		
C. Total Salaries, Wages, and Fringe Benefits (A plus B)					\$26,458		
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies					\$500		
F. Travel					\$12,813		
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.)					\$42,461		
K. Total Direct Costs (C through J)					\$82,232		
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (K plus L)					\$82,232		
N. Other.....							
P. Carryover -- (If Applicable) Federal Funds:				Non-Federal Funds:		Total	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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)							

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

OMB Approved 0524-0039

BUDGET

ORGANIZATION AND ADDRESS University of Connecticut PROJECT DIRECTOR(S) Tessa Getchis - YEAR 2 BUDGET UCONN (01/01/12-12/31/12)				USDA AWARD NO:			
				DURATION PROPOSED MONTHS: 12 Funds Requested by Preparer	DURATION PROPOSED MONTHS: ____ Funds Approved by CSREES (if different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-Federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS					
1. No. of Senior Personnel		Calendar	Academic	Summer			
a. 1 (Co)-PD(s)		1.32			\$8,128		
b. Senior Associates							
2. No of Other Personnel (Non-Faculty)							
a. Research Associates/Postdoctorates							
b. Other Professionals							
c. 1 Paraprofessionals		0.24			\$1,505		
d. 1 Graduate Students		40 hrs/wk			\$13,117		
e. Prebaccalaureate Students							
f. Secretarial-Clerical							
g. Technical, Shop and Other							
Total Salaries and Wages					\$22,750		
B. Fringe Benefits (If charged as Direct Costs)				\$4,833			
C. Total Salaries, Wages, and Fringe Benefits (A plus B)				\$27,583			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$500			
F. Travel				\$11,058			
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.)				\$52,939			
K. Total Direct Costs (C through J)				\$86,080			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (K plus L)				\$86,080			
N. Other.....							
P. Carryover -- (If Applicable) Federal Funds:				Non-Federal Funds:		Total	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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							

OMB Approved 0524-0039

ORGANIZATION AND ADDRESS University of Connecticut PROJECT DIRECTOR(s) Tessa Getchis - TOTAL BUDGET UCONN (01/01/11-12/31/12)				USDA AWARD NO:			
				DURATION PROPOSED MONTHS: 24 Funds Requested by Preparer	DURATION PROPOSED MONTHS: ____ Funds Approved by CSREES (if different)	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-Federal Cost- Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages	CSREES-FUNDED WORK MONTHS						
1. No. of Senior Personnel	Calendar	Academic	Summer				
a. 1 (Co)-PD(s)				\$15,869			
b. Senior Associates							
2. No of Other Personnel (Non-Faculty)							
a. Research Associates/Postdoctorates							
b. 1 Other Professionals				\$2,938			
c. Paraprofessionals							
d. 1 Graduate Students				\$26,041			
e. Prebaccalaureate Students							
f. Secretarial-Clerical							
g. Technical, Shop and Other							
Total Salaries and Wages				\$44,848			
B. Fringe Benefits (If charged as Direct Costs)				\$9,193			
C. Total Salaries, Wages, and Fringe Benefits (A plus B)				\$54,041			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$1,000			
F. Travel				\$23,871			
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.)				\$89,400			
K. Total Direct Costs (C through J)				\$168,312			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (K plus L)				\$168,312			
N. Other.....							
P. Carryover -- (If Applicable) Federal Funds:				Non-Federal Funds: Total			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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)							

3.2 Budget Justification

Include written justification for budget expenditures. Salary and benefits for Principal Investigators must be itemized separately, and requires additional written justification. **Travel budget must identify the purpose of travel, how it serves the project, who is traveling, the destination, and estimated cost of each trip planned.**

Year 1 (01/01/2011-12/31/2011) University of Connecticut Budget

A. Total Salaries and Wages **\$22,098**

1a. Senior Personnel: **\$7,741**

Tessa Getchis is requesting 1.32 months (12%) for salary. Getchis will be responsible for: a) overall fiscal management of the project, b) overseeing the processing of subcontract agreements to cooperating institutions and reimbursements for travel associated with the project, c) convening all organizational meetings for the network, d) reporting on project development and milestones via progress and final reports, and presentations at industry meetings, and e) timely product development and for overall project assessment, including the evaluation of all products and activities developed through the project. In addition, Getchis will identify and compile pertinent information on human health hazards caused from consumption of shellfish for incorporation into the shellfish protocols, and oversee a graduate student undertaking an economic impact analysis of both shellfish and finfish protocols.

2c. Paraprofessionals: **\$1,433**

Michelle Flagge is requesting 0.24 month (2%) for salary. Flagge will be responsible for: a) processing subcontract agreements with cooperating institutions, and b) assisting the project coordinator with tracking all purchases, payments, and reimbursements associated with the project.

2d. Graduate Student: **\$12,924**

Funds are being requested for summer salary at 40 hours per week for unnamed graduate student. Under the direction of Robert Pomeroy and Tessa Getchis, the graduate student will be responsible for undertaking an economic impact analysis of the protocols to address health hazards confronting both shellfish and finfish aquaculture operations of varying sizes.

B. Total Fringe Benefits: **\$4,360**

1a. Senior Personnel Fringe Rate = 34.8%. **\$2,694**

2c. Paraprofessional Fringe Rate = 55.8%. **\$800**

2d. Graduate Student Fringe Rate = 6.7% **\$866**

Total Salaries, Wages and Fringe Benefits: **\$26,458**

E. Materials and Supplies: **\$500**

Funds are requested for office supplies including three USB drives for archiving data for economic analysis, shellfish and finfish protocols, office paper, printer toner cartridges, and writing instruments.

F. Travel: **\$12,813**

		mileage	cost @0.50/mile	Per Diem	Lodging	Tolls	Airfare	Ann Mtg Yr1	Protocol Mtg Yr 1	Ann Mtg Yr2	Focus Gp Yr2
TRAVEL BREAKDOWN											
Getchis	7.5K	70	35	25	0	0	0	60	60	60	0
Ewart	5K	0	0	50	100	0	300	450	450	450	0
Hicks	5K	0	0	50	100	0	300	450	450	450	0
Flimlin	5K	500	250	50	100	10	0	410	410	410	250
Hollingsworth	5K	200	100	25	100	10	0	235	235	235	0
Leavitt	5K	120	60	25	0	10	0	95	95	95	0
Smolowitz	5K	120	60	25	0	10	0	95	95	95	0
Bouchard	4K	600	300	50	100	10	0	460	460	460	250
Buttner	2K	170	85	25	100	0	0	210	0	210	0
Faulds	2K	0	0	50	100	0	300	450	0	450	0
Lazur	2K	0	0	50	100	0	300	450	0	450	0
McIntosh	2K	0	0	50	100	0	300	450	0	450	0
Morse	2K	600	300	50	100	10	0	460	0	460	0
Rippen	2K	0	0	50	100	0	300	450	0	450	0
Rivara	2K	80	40	25	100	50	0	215	0	215	0
Terlizzi	2K	0	0	50	100	0	300	450	0	450	0
Webster	2K	0	0	50	100	0	300	450	0	450	0
Pomeroy	0K	70	35	25	0	0	0	60	0	60	0
La Valley	0K	400	200	50	100	0	0	350	0	350	0
Murphy	0K	100	50	25	100	10	0	185	0	185	0
Reitsma	0K	100	50	25	100	10	0	185	0	185	0
Rice	0K	0	0	0	0	0	0	0	0	0	0
Travel Subtotal		3130	1565	825	1700	130	2400	6620	2255	6620	500
Pomeroy	EC	0	0	594	600	0	0	1194	0	1194	0
Graduate Student	EC	3000	1500	594	600	50	0	2744	0	2744	0
Travel Subtotal								3938	0	3938	0
Totals		6130	3065	2013	2900	180	2400	10558	2255	10558	500
Total by Year								Year 1=	12813	Year 2=	11058
Venue Costs								2400	1600	2400	500
Focus Group Participants: 10 @ \$100 ea to defray costs of mileage, per diem											1000
Training Workshop, Industry Outreach: Registration to cover food, piggyback on other meetings to defray venue costs											

Pomeroy/Graduate Student Travel Breakdown Economic Analysis

		mileage	cost	meals	Lodging	Tolls
Shellfish Site Visit 1 (combined ME/ME)	EC	800	400	162	200	10
Finfish Site Visit 1	EC	x	x	x	x	x
Shellfish Site Visit 2 (CT)	EC	100	50	54	0	
Shellfish Site Visit 3 (MA)	EC	300	150	54	0	
Finfish Site Visit 2 (combine DE, PA, NY)	EC	1200	600	216	300	25
Finfish Site Visit 3	EC	x	x	x	x	x
Finfish Site Visit 4	EC	x	x	x	x	x
Shellfish Site Visit 4 (NJ)	EC	600	300	108	100	15
	Sub	3000	1500	594	600	50
	Total	2744				

Annual Meeting**\$6,620**

Funds are requested to support travel necessary to convene the Annual Northeast Aquaculture Extension meeting. Funding is requested to allow project participants to travel to annual organizational meetings. This request includes reimbursement for mileage (\$1,565) [\$0.50/mile for a total of 3130 miles for participants not traveling by air; meal expenses (\$825) [for participants require meal reimbursement; based on government per diem rates]; lodging (\$1,700) [\$100/night x 17 participants]; tolls (\$130); airfare (\$2,400) [\$300/flight x 8 participants]. This request is based on the previous year's annual meeting costs in at the Hampton Inn in Warwick, Rhode Island. Venue costs are noted under item "J" and "Venue Costs".

Protocol Development Meeting**\$2,255**

Funds are requested to support travel necessary to convene a mid-year meeting to at which the group will review and discuss protocol development. This request includes reimbursement for mileage (\$805) [\$0.50/mile for a total of 1610 miles for participants not traveling by air; meal expenses (\$300) [for participants require meal reimbursement; based on government per diem rates]; lodging (\$500) [\$100/night x 5 participants]; tolls (\$50); airfare (\$600) [\$300/flight x 2 participants]. Venue costs are noted under item "J" and "Venue Costs".

Farm Visits to Conduct Economic Analysis**\$3,938**

Funds are requested to support travel necessary for the Robert Pomeroy and unnamed graduate student to visit four finfish and four shellfish farms to initiate/complete economic analysis. This request includes reimbursement for mileage (\$1,500) [\$0.50/mile for a total of 3000 miles]; meal expenses (\$1,188) [based on government per diem rates]; lodging (\$1,200) [\$100/night x 12 room nights]; and tolls (\$50).

J. All Other Direct Costs:**\$48,461****Subcontracts:****\$43,961**

Bouchard, University of Maine	\$4,000
Buttner, Salem State College	\$2,000
Ewart, University of Delaware	\$5,000
Faulds, The Pennsylvania State University	\$1,961
Flimlin, Rutgers University	\$5,000
Hicks, University of Delaware	\$5,000
Hollingsworth, University of Massachusetts	\$5,000
Leavitt, Roger Williams University	\$5,000
McIntosh, Delaware State University	\$2,000
Morse, University of Maine	\$2,000
Rivara, Cornell Cooperative Extension	\$2,000
Smolowitz, Roger Williams University	\$5,000

Other - Venue Rental:**\$4,000**

An amount of \$2,400 is requested to reserve meeting space for the Annual Northeast Aquaculture Extension meeting/Professional Development Seminar and provide light refreshments to maintain meeting continuity for project participants. An amount of \$1,600 is requested to reserve meeting space for the mid-year meeting at which the group will review and

discuss protocol development, and provide light refreshments to maintain meeting continuity for project participants. These figures are based on previous Extension Meetings, and on the number of participants at each meeting.

Other - Telephone Communication and Photocopy: \$500

Funds (\$300) are requested to facilitate communication via conference calls among the project coordinator and co-investigators and targeted stakeholder groups. Three calls will be made at approximately \$100 per call. Funds (\$200) are requested to recover the cost of reproducing publications resulting from this project.

K. Total Direct Costs (Year 1: University of Connecticut): \$88,232

University of Maryland: \$8,000

Investigators who are located at the University of Maryland (Lazur, Rippen, Terlizzi and Webster) will carry out a section of this project. The University of Connecticut has difficulty accepting a subcontract from the University of Maryland (via NRAC) and then subcontracting it back to the University of Maryland. Although the Co-PIs from the University of Maryland will be part of the project, the funding for their part of the project will be through an account set up at the University of Maryland rather than as a subcontract from the University of Connecticut. The budget and budget justification for the University of Maryland section of this project are included as separate attachments to this project but the funds will not appear in the subcontract to the University of Connecticut.

Project Budget (Year 1 incl. University of Maryland): \$96,232

Year 1 (01/01/2012-12/31/212) University of Connecticut Budget

A. Total Salaries and Wages \$22,750

1a. Senior Personnel: \$8,128

Tessa Getchis is requesting 1.32 months (12%) for salary, which includes a 5% Cost of Living Adjustment for Year 2.

2c. Paraprofessionals: \$1,505

Michelle Flagge is requesting 0.24 month of salary (2%) per year, which includes a 5% Cost of Living Adjustment for Year 2.

2d. Graduate Student: \$13,117

Funds are being requested for summer salary at 40 hours per week for unnamed graduate student, which includes a 5% Cost of Living Adjustment for Year 2.

B. Total Fringe Benefits: \$4,833

1a. Senior Personnel Fringe Rate = 36.0%. \$2,926

2c. Paraprofessional Fringe Rate = 57.0%. \$858

2d. Graduate Student Fringe Rate = 8.0% \$1,049

Total Salaries, Wages and Fringe Benefits: \$27,583

E. Materials and Supplies:**\$500**

Funds are requested for office supplies including three USB drives for archiving data for economic analysis, shellfish and finfish protocols, office paper, printer toner cartridges, and writing instruments.

F. Travel:**\$11,058****Annual Meeting****\$6,620**

Funds are requested to support travel necessary to convene the Annual Northeast Aquaculture Extension meeting. Funding is requested to allow project participants to travel to annual organizational meetings. This request includes reimbursement for mileage (\$1,565) [\$0.50/mile for a total of 3130 miles for participants not traveling by air; meal expenses (\$825) [for participants require meal reimbursement; based on government per diem rates]; lodging (\$1,700) [\$100/night x 17 participants]; tolls (\$130); airfare (\$2,400) [\$300/flight x 8 participants]. This request is based on the previous year's annual meeting costs in at the Hampton Inn in Warwick, Rhode Island. Venue costs are noted under item "J" and "Venue Costs".

Farm Visits to Conduct Economic Analysis**\$3,938**

Funds are requested to support travel necessary for the Robert Pomeroy and unnamed graduate student to visit four finfish and four shellfish farms to initiate/complete economic analysis. This request includes reimbursement for mileage (\$1,500) [\$0.50/mile for a total of 3000 miles]; meal expenses (\$1,188) [based on government per diem rates]; lodging (\$1,200) [\$100/night x 12 room nights]; and tolls (\$50).

Focus Group Travel**\$500**

Funds are request to support travel necessary for Gef Flimlin to moderate the shellfish focus group and Debbie Bouchard to moderate the finfish focus group. These funds will be used for mileage, tolls and per diem. The location of the focus groups is TBD, so amounts of each use of funds are approximate.

J. All Other Direct Costs:**\$52,939****Subcontracts:****\$44,039**

Bouchard, University of Maine	\$4,000
Buttner, Salem State College	\$2,000
Ewart, University of Delaware	\$5,000
Faulds, The Pennsylvania State University	\$2,039
Flimlin, Rutgers University	\$5,000
Hicks, University of Delaware	\$5,000
Hollingsworth, University of Massachusetts	\$5,000
Leavitt, Roger Williams University	\$5,000
McIntosh, Delaware State University	\$2,000
Morse, University of Maine	\$2,000
Rivara, Cornell Cooperative Extension	\$2,000
Smolowitz, Roger Williams University	\$5,000

Other – Payment for Participation in Focus Group **\$1,000**

Funds are requested to defray the costs of mileage and per diem for 10 persons @ \$100 ea to participate in a focus group to pre-test the finfish and shellfish protocols.

Venue Rental and Industry Outreach Workshop Costs: **\$7,400**

An amount of \$2,400 is requested to reserve meeting space for the Annual Northeast Aquaculture Extension meeting/Professional Development Seminar and provide light refreshments to maintain meeting continuity for project participants. An amount of \$500 is requested to reserve meeting space for two focus groups and provide light refreshments to maintain meeting continuity for project participants. An amount of \$4500 is requested for the following costs associated with the organization of six industry outreach workshops: to provide travel stipends for speakers in the field of aquatic animal health (\$500), to print workshop materials (\$200), and to advertise for the industry outreach workshops (\$50).

Other - Telephone Communication and Photocopy: **\$500**

Funds (\$300) are requested to facilitate communication via conference calls among the project coordinator and co-investigators and targeted stakeholder groups. Three calls will be made at approximately \$100 per call. Funds (\$200) are requested to recover the cost of reproducing publications resulting from this project.

K. Total Direct Costs (Year 2: University of Connecticut): **\$92,080**

University of Maryland: **\$8,000**

Investigators who are located at the University of Maryland (Lazur, Rippen, Terlizzi and Webster) will carry out a section of this project. The University of Connecticut has difficulty accepting a subcontract from the University of Maryland (via NRAC) and then subcontracting it back to the University of Maryland. Although the Co-PIs from the University of Maryland will be part of the project, the funding for their part of the project will be through an account set up at the University of Maryland rather than as a subcontract from the University of Connecticut. The budget and budget justification for the University of Maryland section of this project are included as separate attachments to this project but the funds will not appear in the subcontract to the University of Connecticut.

Project Budget (Year 2 including University of Maryland): **\$100,080**

Total Direct Costs (Year 1+Year 2: University of Connecticut): \$180,312

Total Project Budget (Year1+Year 2 incl. Univ. of Maryland): \$196,312

3.3. Current and Pending Support (Schedule C)

Each investigator shall complete a Current and Pending Support form (use Schedule C, CSREES-2005 Form) listing all sources of support for active and pending projects including this proposal.

- **Current and Pending Support provided in attached PDF document**

Section 4

4.1 Letters of Intent and AOR Letters

Each funded and non-funded investigator (including the Project Coordinator), participant, and consultant shall submit two copies of a signed letter of intent indicating his/her willingness to participate in the project, the expected level of funding or financial contribution, which of the objectives (s)he will participate in, and the specific activities/tasks (s)he will perform. **Any proposal submitted without letters of intent from all investigators, participants and consultants will be considered incomplete.** Authorized Organizational Representative (AOR) letters must be signed by AOR and submitted with the proposal. (See attached template at the end of this RFA)

- **Letters of Intent provided in attached PDF document**
- **AOR Letters provided in attached PDF document**

4.2 Conflict of Interest Disclosure Letter

Participation of TIAC members as **funded** participants of projects may be deemed possible if project PIs can provide evidence that the services/role of the TIAC member is not otherwise available throughout the northeast region and that every attempt was made to locate the indicated services elsewhere. The PIs need to specify all potential conflict of interests and indicate how they will be addressed.

- **Not applicable**

4.3 Conflict of Interest List

Refer to CSREES-2007 Form as instructed under Attachments. This form shall be completed and submitted with the proposal.

- **Conflict of Interest provided in attached PDF document**

Section 5

5.1 Resumes

Include a short (no more than 3 pages) resume for each investigator and participant. General formatting instructions must be adhered to (see attached checklist).

- **Resumes provided in attached PDF document**

5.2 Supporting Materials

Include any **pertinent** support materials (e.g., letters from industry, etc.). Letters from industry members not involved in the project indicating their support for the project are also encouraged.

- **Letters of Support provided in attached PDF document**

5.3 List of Potential Reviewers

P.I.'s are requested to provide a list of three to five individuals that are technically competent to review their proposal. It would be helpful if there were research, industry, and extension people in the list. They should be from outside of the Northeast region and they should not be collaborators with project personnel. Please supply the potential reviewer's names, affiliation, mailing address, telephone numbers, and e-mail address.

- **Kristin Rasmussen, Pacific Shellfish Institute, 120 State Ave. NE #142, Olympia, WA 98501, (360) 754-2741 psi@pacshell.org**

- **Carolyn Friedman, University of Washington, School of Aquatic & Fishery Sciences, Box 355020, Seattle, WA 98195-5020, (206) 543-9519 carolynf@u.washington.edu**
- **Jill Rolland, USDA Animal and Plant Health Inspection Service, (301) 734-7727, Jill.B.Rolland@aphis.usda.gov**

Assurance Statement(s) (Form CSREES-2008)

- **Provided in attached PDF document**

Certification Regarding Debarment, Suspension, and Other Responsibility Matters (Forms AD-1047 & AD-1048)

- **Provided in attached PDF document**

Certification Regarding Drug-Free Workplace Requirements (Grants) (Forms AD-1049 & AD-1050)

- **Provided in attached PDF document**

Certification Regarding Lobbying – Contracts, Grants, Loans and Cooperative Agreements

- **Provided in attached PDF document**

OMB Approved 0524-0039

ORGANIZATION AND ADDRESS University of Connecticut				USDA AWARD NO:			
PROJECT DIRECTOR(s) Tessa Getchis - YEAR 1 BUDGET UCONN (01/01/2011-12/31/2011)				DURATION PROPOSED MONTHS: 12 Funds Requested by Preparer	DURATION PROPOSED MONTHS: ____ Funds Approved by CSREES (if different)	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-Federal Cost- Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS					
1. No. of Senior Personnel		Calendar	Academic	Summer			
a. 1 (Co)-PD(s)		1.32			\$7,741		
b. Senior Associates							
2. No of Other Personnel (Non-Faculty)							
a. Research Associates/Postdoctorates							
b. Other Professionals							
c. 1 Paraprofessionals		0.24			\$1,433		
d. 1 Graduate Students				40 hrs/wk	\$12,924		
e. Prebaccalaureate Students							
f. Secretarial-Clerical							
g. Technical, Shop and Other							
Total Salaries and Wages					\$22,098		
B. Fringe Benefits (If charged as Direct Costs)				\$4,360			
C. Total Salaries, Wages, and Fringe Benefits (A plus B)				\$26,458			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$500			
F. Travel				\$12,813			
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.)				\$48,461			
K. Total Direct Costs (C through J)				\$88,232			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (K plus L)				\$88,232			
N. Other.....							
P. Carryover -- (If Applicable) Federal Funds:				Non-Federal Funds: Total			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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
Form CSREES-2004 (12/2000)

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

OMB Approved 0524-0039

BUDGET

ORGANIZATION AND ADDRESS University of Connecticut PROJECT DIRECTOR(S) Tessa Getchis - YEAR 2 BUDGET UCONN (01/01/12-12/31/12)				USDA AWARD NO:			
				DURATION PROPOSED MONTHS: 12 Funds Requested by Preparer	DURATION PROPOSED MONTHS: ____ Funds Approved by CSREES (if different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-Federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS					
1. No. of Senior Personnel		Calendar	Academic	Summer			
a. 1 (Co)-PD(s)		1.32			\$8,128		
b. Senior Associates							
2. No of Other Personnel (Non-Faculty)							
a. Research Associates/Postdoctorates							
b. Other Professionals							
c. 1 Paraprofessionals		0.24			\$1,505		
d. 1 Graduate Students		40 hrs/wk			\$13,117		
e. Prebaccalaureate Students							
f. Secretarial-Clerical							
g. Technical, Shop and Other							
Total Salaries and Wages					\$22,750		
B. Fringe Benefits (If charged as Direct Costs)				\$4,833			
C. Total Salaries, Wages, and Fringe Benefits (A plus B)				\$27,583			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$500			
F. Travel				\$11,058			
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.)				\$52,939			
K. Total Direct Costs (C through J)				\$92,080			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (K plus L)				\$92,080			
N. Other.....							
P. Carryover -- (If Applicable) Federal Funds:				Non-Federal Funds:		Total	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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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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, reviewing and revising your answers, and reviewing and approving the final form of the information collection.

Form CSREES-2004 (12/2000)

OMB Approved 0524-0039

ORGANIZATION AND ADDRESS University of Connecticut				USDA AWARD NO:			
PROJECT DIRECTOR(S) Tessa Getchis - TOTAL BUDGET UCONN (01/01/11-12/31/12)				DURATION PROPOSED MONTHS: 24 Funds Requested by Preparer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (if different)	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-Federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS					
1. No. of Senior Personnel		Calendar	Academic	Summer			
a. 1 (Co)-PD(s)					\$15,869		
b. _____ Senior Associates							
2. No of Other Personnel (Non-Faculty)							
a. _____ Research Associates/Postdoctorates							
b. 1 Other Professionals					\$2,938		
c. _____ Paraprofessionals							
d. 1 Graduate Students					\$26,041		
e. _____ Prebaccalaureate Students							
f. _____ Secretarial-Clerical							
g. _____ Technical, Shop and Other							
Total Salaries and Wages					\$44,848		
B. Fringe Benefits (If charged as Direct Costs)				\$9,193			
C. Total Salaries, Wages, and Fringe Benefits (A plus B)				\$54,041			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$1,000			
F. Travel				\$23,871			
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.)				\$101,400			
K. Total Direct Costs (C through J)				\$180,312			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (K plus L)				\$180,312			
N. Other.....							
P. Carryover -- (If Applicable) Federal Funds:				Non-Federal Funds: Total			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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)							

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 the data, reviewing the collection of data, and completing and reviewing the collection of data. Send comments regarding this burden estimate or any aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Office of Management and Budget, Paperwork Project Director (0524-0039), Washington, DC 20503.

University of Connecticut
Office for Sponsored Programs

					Year 1	Year 2	Total
A. Senior Personnel							
Tessa Getchis	Salary	Appt	Mos	% Effort			
	\$61,434	11	1.32	12.00%	7,741	8,128	15,869
			-			-	-
			-		-	-	-
			-		-	-	-
			-		-	-	-
B. Other Personnel							
Michelle Flagge, Fiscal Officer	\$68,221	12	0.24	2.00%	1,433	1,505	2,938
Grad Student, Lvl 1, 40hrs, summer			-		12,924	13,117	26,041
			-				-
			-		-	-	-
			-		-	-	-
			-		-	-	-
Total Salaries					22,098	22,750	44,848
C. Fringe Benefits							
Current Fringe Rates							
Tessa Getchis					Yr 1	Yr 2	
					34.8%	36.0%	
							2,694
							2,926
							5,620
							-
							-
							-
							-
Michelle Flagge, Fiscal Officer					55.8%	57.0%	
Grad Student, Lvl 1, 40hrs, summer					6.7%	8.0%	
							800
							858
							1,658
							866
							1,049
							1,915
							-
							-
							-
							-
							-
Total Fringes					4,360	4,833	9,193
Total Salaries & Fringes					26,458	27,583	54,041
D. Equipment							
*							
E. Travel							
Domestic							
Foreign							
F. Participant Support Costs							
# of Participants: _____							
Stipends							-
Travel							-
Subsistence							-
Other							-
Total Participant Costs					-	-	-
G. Other Direct Costs							
Materials & Supplies					500	500	1,000
Publication Costs							-
Consultant Services (see note)	***						-
Computer Services							-
Subawards (see note)	**				43,961	44,039	88,000
Other - payment for partic. Focus grp						1,000	
Other - Venue rental and workshop costs					4,000	7,400	11,400
Other -Telephone / Photocopy					500	500	
Tuition	*						-
Tuition Calculator							
Total Other Direct Costs					48,961	53,439	102,400
H.							
I. Total Direct Costs					88,232	92,080	180,312
Indirect Costs (F&A) @							
0%					-	-	-
J.							
* no F & A applied, ** F & A on 1st \$25,000							
Total University of Connecticut Costs					\$ 88,232	\$ 92,080	\$ 180,312

Account to University of Maryland
Total Project Costs

8,000 8,000 16,000
96,232 100,080 196,312
budget_getchis and full proposal.xls

TRAVEL BREAKDOWN

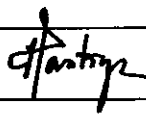
		mileage	cost @0.50/mile	Per Diem	Lodging	Tolls	Airfare	Ann Mtg Yr1	Protocol Mtg Yr 1	Ann Mtg Yr2	Focus Gp Yr2
Getchis	7.5K	70	35	25	0	0	0	60	60	60	0
Ewart	5K	0	0	50	100	0	300	450	450	450	0
Hicks	5K	0	0	50	100	0	300	450	450	450	0
Flimlin	5K	500	250	50	100	10	0	410	410	410	250
Hollingsworth	5K	200	100	25	100	10	0	235	235	235	0
Leavitt	5K	120	60	25	0	10	0	95	95	95	0
Smolowitz	5K	120	60	25	0	10	0	95	95	95	0
Bouchard	4K	600	300	50	100	10	0	460	460	460	250
Minor Contributor			0								
Buttner	2K	170	85	25	100	0	0	210	0	210	0
Faulds	2K	0	0	50	100	0	300	450	0	450	0
Lazur	2K	0	0	50	100	0	300	450	0	450	0
McIntosh	2K	0	0	50	100	0	300	450	0	450	0
Morse	2K	600	300	50	100	10	0	460	0	460	0
Rippen	2K	0	0	50	100	0	300	450	0	450	0
Rivara	2K	80	40	25	100	50	0	215	0	215	0
Terlizzi	2K	0	0	50	100	0	300	450	0	450	0
Webster	2K	0	0	50	100	0	300	450	0	450	0
Pomeroy	0K	70	35	25	0	0	0	60	0	60	0
La Valley	0K	400	200	50	100	0	0	350	0	350	0
Murphy	0K	100	50	25	100	10	0	185	0	185	0
Reitsma	0K	100	50	25	100	10	0	185	0	185	0
Rice	0K	0	0	0	0	0	0	0	0	0	0
Travel Subtotal		3130	1565	825	1700	130	2400	6620	2255	6620	500
Pomeroy	EC	0	0	594	600	0	0	1194	0	1194	0
Graduate Student	EC	3000	1500	594	600	50	0	2744	0	2744	0
Travel Subtotal								3938	0	3938	0
Totals		6130	3065	2013	2900	180	2400	10558	2255	10558	500
Total by Year								Year 1=	12813	Year 2=	11058
Venue Costs								2400	1600	2400	500
Focus Group Participants: 10 persons @ \$100 ea to defray costs of mileage, per diem											1000
Training Workshop, Industry Outreach: Registration will cover cost of food, piggyback on other meetings to defray venue costs											

Pomeroy and Graduate Student Travel Breakdown for Economic Analysis

		mileage	cost	meals	Lodging	Tolls
Shellfish Site Visit 1 (combined ME/ME)	EC	800	400	162	200	10
Finfish Site Visit 1	EC	x	x	x	x	x
Shellfish Site Visit 2 (CT)	EC	100	50	54	0	
Shellfish Site Visit 3 (MA)	EC	300	150	54	0	
Finfish Site Visit 2 (combine DE, PA, NY)	EC	1200	600	216	300	25
Finfish Site Visit 3	EC	x	x	x	x	x
Finfish Site Visit 4	EC	x	x	x	x	x
Shellfish Site Visit 4 (NJ)	EC	600	300	108	100	15
Sub		3000	1500	594	600	50
Total		2744				

|

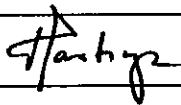
BUDGET (Year 1)

ORGANIZATION AND ADDRESS University of Maine, 5735 Hitchner Hall, Rm 262, Orono, ME 04469				USDA AWARD NO.				
PROJECT DIRECTOR(S) Deborah A. Bouchard				DURATION PROPOSED MONTHS: 12 Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		2690				
		Calendar	Academic					Summer
1. No. Of Senior Personnel								
a. 1 (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.....								
Total Salaries and Wages →				2690				
B. Fringe Benefits (If charged as Direct Costs)				1310				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I) →				4000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000				
N. Other..... →								
O. Total Amount of This Request →				4000				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$		
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE	
Project Director								
Michael M. Hastings, Director-Office of Research & Sponsored Programs							1-8-2010	
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

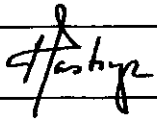
BUDGET (Year 2)

ORGANIZATION AND ADDRESS University of Maine, 5735 Hitchner Hall, Rm 262, Orono, ME 04469				USDA AWARD NO.					
PROJECT DIRECTOR(S) Deborah A. Bouchard				DURATION PROPOSED MONTHS: 12 Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)		
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS							
		Calendar	Academic					Summer	
1. No. Of Senior Personnel					2690				
a. 1 (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.....									
Total Salaries and Wages..... →					2690				
B. Fringe Benefits (If charged as Direct Costs)				1310					
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000					
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)									
E. Materials and Supplies									
F. Travel									
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.)									
K. Total Direct Costs (C through I)..... →				4000					
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 included in on/off campus bases.)									
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000					
N. Other..... →									
O. Total Amount of This Request..... →				4000					
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) → - Non Cash Contributions (both Applicant and Third Party)									
AME AND TITLE (Type or print) Project Director Michael M. Hastings, Director – Office of Research & Sponsored Programs Signature (for optional use)				SIGNATURE (required for revised budget only)  				DATE 1-8-2010	

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

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BUDGET (Total)

ORGANIZATION AND ADDRESS University of Maine, 5735 Hitchner Hall, Rm 262, Orono, ME 04469				USDA AWARD NO.				
PROJECT DIRECTOR(S) Deborah A. Bouchard				DURATION PROPOSED MONTHS: 24 Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS		5380				
		Calendar	Academic					Summer
1. No. Of Senior Personnel								
a. 1 (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.....								
Total Salaries and Wages..... →				5380				
B. Fringe Benefits (If charged as Direct Costs)				2620				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				8000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I)..... →				8,000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				8,000				
N. Other..... →								
O. Total Amount of This Request..... →				8,000				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$	Total \$			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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								
Michael M. Hastings, Director-Office of Research & Sponsored Programs						1-8-2010		
Signature (for optional use)								

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

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BUDGET (Year 1)

ORGANIZATION AND ADDRESS <i>Salem State College, Salem, MA 01970</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Joseph K. Buttner</i>				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages				CSREES-FUNDED WORK MONTHS			
1. No. Of Senior Personnel				Calendar	Academic	Summer	2000
a. <u>1</u> (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							
Total Salaries and Wages →							2000
B. Fringe Benefits (If charged as Direct Costs)							
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →							2000
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →							2000
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →							2000
N. Other							
O. Total Amount of This Request →							2000
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
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BUDGET (Year 2)

ORGANIZATION AND ADDRESS <i>Salem State College, Salem, MA 01970</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Joseph K. Buttner</i>				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages				CSREES-FUNDED WORK MONTHS			
1. No. Of Senior Personnel				Calendar	Academic	Summer	2000
a. <u>1</u> (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.....							
Total Salaries and Wages →							2000
B. Fringe Benefits (If charged as Direct Costs)							
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →							2000
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →							2000
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →							2000
N. Other..... →							
O. Total Amount of This Request →							2000
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

UNITED STATES DEPARTMENT OF AGRICULTURE
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BUDGET (Total)

ORGANIZATION AND ADDRESS <i>Salem State College, Salem, MA 01970</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Joseph K. Buttner</i>				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages	CSREES-FUNDED WORK MONTHS			4000			
1. No. Of Senior Personnel	Calendar	Academic	Summer				
a. <u>1</u> (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							
Total Salaries and Wages →				4000			
B. Fringe Benefits (If charged as Direct Costs)							
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				4000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000			
N. Other							
O. Total Amount of This Request →				4000			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS University of Delaware 700 Pilottown Road Lewes, DE 19958				USDA AWARD NO.				
PROJECT DIRECTOR(S) John W. Ewart				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		\$3,779.00				
1. No. Of Senior Personnel		<i>Calendar</i>	<i>Academic</i>					<i>Summer</i>
a. <u>1</u> (Co)-PD(s)53						
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								
Total Salaries and Wages →				\$3,779.00				
B. Fringe Benefits (If charged as Direct Costs)				\$1,221.00				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$5,000.00				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				\$5,000.00				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$5,000.00				
N. Other →								
O. Total Amount of This Request →				\$5,000.00				
P. Carryover -- (If Applicable) Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

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BUDGET (Year 2)

ORGANIZATION AND ADDRESS University of Delaware 700 Pilottown Road Lewes, DE 19958				USDA AWARD NO.			
PROJECT DIRECTOR(S) John W. Ewart				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS Calendar Academic Summer		Funds Requested by Proposer	Funds Approved by CSREES (If different)		
1. No. Of Senior Personnel		Calendar Academic Summer					
a. <u>1</u> (Co)-PD(s).....		.51					
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.....							
Total Salaries and Wages →							
B. Fringe Benefits (If charged as Direct Costs)				\$3,779.00			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$1,221.00			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)				\$5,000.00			
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I)..... →				\$5,000.00			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$5,000.00			
N. Other..... →							
O. Total Amount of This Request..... →				\$5,000.00			
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS University of Delaware 700 Pilottown Road Lewes, DE 19958				USDA AWARD NO.			
PROJECT DIRECTOR(S) John W. Ewart				DURATION PROPOSED MONTHS: <u>24</u>	DURATION PROPOSED MONTHS: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS Calendar Academic Summer		Funds Requested by Proposer \$7,558.00	Funds Approved by CSREES (If different)	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
1. No. Of Senior Personnel		a. <u>1</u> (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	Total Salaries and Wages →
Total Salaries and Wages →		\$7,558.00					
B. Fringe Benefits (If charged as Direct Costs)		\$2,442.00					
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →		\$10,000.00					
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)				E. Materials and Supplies	F. Travel	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.)							
K. Total Direct Costs (C through I) →							
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 included in on/off campus bases.)				M. Total Direct and F&A/Indirect Costs (J plus K) →	N. Other →	O. Total Amount of This Request →	\$10,000.00
P. Carryover -- (If Applicable) Federal Funds: \$							
Non-Federal funds: \$							
Total \$							
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)						Cash (both Applicant and Third Party) →	- Non Cash Contributions (both Applicant and Third Party)
AME AND TITLE (Type or print)							
SIGNATURE (required for revised budget only)						DATE	
Project Director						Authorized Organizational Representative	
Signature (for optional use)						Signature (for optional use)	

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS Penn State University, University Park, PA				USDA AWARD NO.			
PROJECT DIRECTOR(S) Ann Faulds				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages				CSREES-FUNDED WORK MONTHS			
1. No. Of Senior Personnel				Calendar	Academic	Summer	
a. <u>1</u> (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							
Total Salaries and Wages →				1509			
B. Fringe Benefits (If charged as Direct Costs)				452			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				1961			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				1961			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				1961			
N. Other							
O. Total Amount of This Request →				1961			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 2)

ORGANIZATION AND ADDRESS Penn State University, University Park, PA				USDA AWARD NO.				
PROJECT DIRECTOR(S) Ann Faulds				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		1570				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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.....								
Total Salaries and Wages →				1570				
B. Fringe Benefits (If charged as Direct Costs)				469				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2039				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I) →				2039				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2039				
N. Other..... →								
O. Total Amount of This Request →				2039				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$		
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS <i>Penn State University, University Park, PA</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Ann Faulds</i>				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages	CSREES-FUNDED WORK MONTHS			3079			
1. No. Of Senior Personnel	Calendar	Academic	Summer				
a. <u>1</u> (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							
Total Salaries and Wages →				3079			
B. Fringe Benefits (If charged as Direct Costs)				921			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				4000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000			
N. Other							
O. Total Amount of This Request →				4000			
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS Office of Research and Sponsored Programs, Rutgers, The State University of New Jersey 3 Rutgers Plaza, New Brunswick, NJ 08901				USDA AWARD NO.			
PROJECT DIRECTOR(S) George E Flimlin				DURATION PROPOSED MONTHS: _12_	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)			
A. Salaries and Wages				CSREES-FUNDED WORK MONTHS			
1. No. Of Senior Personnel		Calendar		Academic		Summer	
a. _1_ (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.....		_____		_____		_____	
Total Salaries and Wages →				3645		_____	
B. Fringe Benefits (If charged as Direct Costs)				1356		_____	
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				5000		_____	
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)				_____		_____	
E. Materials and Supplies				_____		_____	
F. Travel				_____		_____	
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.)				_____		_____	
K. Total Direct Costs (C through I)..... →				5000		_____	
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 included in on/off campus bases.)				_____		_____	
M. Total Direct and F&A/Indirect Costs (J plus K) →				5000		_____	
N. Other..... →				_____		_____	
O. Total Amount of This Request..... →				5000		_____	
P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$							
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)						_____	
Cash (both Applicant and Third Party) →						_____	
- Non Cash Contributions (both Applicant and Third Party)						_____	
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director				_____		_____	
Authorized Organizational Representative				_____		_____	

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 2)

ORGANIZATION AND ADDRESS Office of Research and Sponsored Programs, Rutgers, The State University of New Jersey 3 Rutgers Plaza, New Brunswick, NJ 08901				USDA AWARD NO.												
PROJECT DIRECTOR(S) George E Flimlin				DURATION PROPOSED MONTHS: _____ Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	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 a. _1_ (Co)-PD(s) b. _____ Senior Associates		CSREES-FUNDED WORK MONTHS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Calendar</th> <th style="width: 33%;">Academic</th> <th style="width: 33%;">Summer</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		Calendar	Academic	Summer							3618			
Calendar	Academic	Summer														
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 Total Salaries and Wages →																
B. Fringe Benefits (If charged as Direct Costs)				1382												
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				5000												
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)																
E. Materials and Supplies																
F. Travel																
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.)																
K. Total Direct Costs (C through I) →				5000												
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 included in on/off campus bases.)																
M. Total Direct and F&A/Indirect Costs (J plus K) →				5000												
N. Other →																
O. Total Amount of This Request →				5000												
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$												
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) → - Non Cash Contributions (both Applicant and Third Party)				Total \$												
AME AND TITLE (Type or print) Project Director				SIGNATURE (required for revised budget only)			DATE									
Authorized Organizational Representative																

BUDGET (Year 1+ 2 Total)

ORGANIZATION AND ADDRESS Office of Research and Sponsored Programs, Rutgers, The State University of New Jersey 3 Rutgers Plaza, New Brunswick, NJ 08901				USDA AWARD NO.				
				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)	
PROJECT DIRECTOR(S) George E Flimlin								
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		7263				
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								
Total Salaries and Wages →				7263				
B. Fringe Benefits (If charged as Direct Costs)				2738				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				10,000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I) →				10,000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				10,000				
N. Other								
O. Total Amount of This Request →				10,000				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$	Total \$			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS University of Delaware 700 Pilottown Road Lewes, DE 19958				USDA AWARD NO.				
PROJECT DIRECTOR(S) Doris Hicks				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		\$3,779.00				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (Co)-PD(s)57						
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								
Total Salaries and Wages →				\$3,779.00				
B. Fringe Benefits (If charged as Direct Costs)				\$1,221.00				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$5,000.00				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				\$5,000.00				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$5,000.00				
N. Other →								
O. Total Amount of This Request →				\$5,000.00				
P. Carryover -- (If Applicable) Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 2)

ORGANIZATION AND ADDRESS University of Delaware 700 Pilottown Road Lewes, DE 19958				USDA AWARD NO.			
PROJECT DIRECTOR(S) Doris Hicks				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS Calendar Academic Summer		Funds Requested by Proposer	Funds Approved by CSREES (If different)		
1. No. Of Senior Personnel		Calendar Academic Summer					
a. <u>1</u> (Co)-PD(s)55					
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							
Total Salaries and Wages →				\$3,779.00			
B. Fringe Benefits (If charged as Direct Costs)				\$1,221.00			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$5,000.00			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				\$5,000.00			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$5,000.00			
N. Other →							
O. Total Amount of This Request →				\$5,000.00			
P. Carryover -- (If Applicable) Federal Funds: \$ _____ Non-Federal funds: \$ _____ Total \$ _____							
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS University of Delaware 700 Pilottown Road Lewes, DE 19958				USDA AWARD NO.			
PROJECT DIRECTOR(S) Doris Hicks				DURATION PROPOSED MONTHS: <u>24</u>	DURATION PROPOSED MONTHS: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages				CSREES-FUNDED WORK MONTHS			
				Calendar	Academic	Summer	
1. No. Of Senior Personnel							
a. <u>1</u> (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							
Total Salaries and Wages →				\$7,558.00			
B. Fringe Benefits (If charged as Direct Costs)				\$2,442.00			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$10,000.00			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				\$10,000.00			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$10,000.00			
N. Other							
O. Total Amount of This Request →				\$10,000.00			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) → - Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

OMB Approved 0524-0039
Expires 03/31/2004

ORGANIZATION AND ADDRESS University of Massachusetts				USDA AWARD NO.				
PROJECT DIRECTOR(S) Craig Hollingsworth				DURATION PROPOSED MONTHS: 12 Funds Requested by Proposer	DURATION PROPOSED MONTHS: Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/Match- ing Funds Approved by CSREES (If Different)	
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS		3858				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. 1 (Co)-PD(s)		0.7 FTE						
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.....								
Total Salaries and Wages..... →								
B. Fringe Benefits (If charged as Direct Costs)				1142				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				5000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J)..... →								
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →								
N. Other..... →								
O. Total Amount of This Request →				5000				
P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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 Craig Hollingsworth				[Signature]		1/26/10		
Authorized Organizational Representative								
Signature (for optional use) [Signature]						2-3-10		

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

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BUDGET (Year 2)

ORGANIZATION AND ADDRESS <i>University of Massachusetts</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Craig Hollingsworth</i>				DURATION PROPOSED MONTHS: 12	DURATION PROPOSED MONTHS:	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
				<i>Funds Requested by Proposer</i>	<i>Funds Approved by CSREES (If different)</i>		
A. Salaries and Wages..... 1. No. Of Senior Personnel		CSREES-FUNDED WORK MONTHS Calendar Academic Summer		3858			
a. 1 (Co)-PD(s)		0.7 FTE					
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.....							
Total Salaries and Wages →							
B. Fringe Benefits (If charged as Direct Costs)				1142			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				5000			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through J) →							
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →							
N. Other..... →							
O. Total Amount of This Request →				5000			
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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) <i>Jennifer A. Donaus</i>						2-3-10	

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ORGANIZATION AND ADDRESS University of Massachusetts				USDA AWARD NO.				
PROJECT DIRECTOR(S) Craig Hollingsworth				DURATION PROPOSED MONTHS: 12 Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS		7716				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. 1 (Co)-PD(s)		0.7 FTE						
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								
Total Salaries and Wages →								
B. Fringe Benefits (If charged as Direct Costs)				2284				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				10000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I) →								
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →								
N. Other..... →								
O. Total Amount of This Request →				10000				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$	Total \$			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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				Jennifer O'Donnell		2-3-10		
Signature (for optional use)								

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

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BUDGET (Year 1)

ORGANIZATION AND ADDRESS University of Maryland Sea Grant Extension, 2020 Horn Point Rd. Cambridge, MD 21613				USDA AWARD NO.				
PROJECT DIRECTOR(S) Andrew Lazur				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		1,300				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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								
Total Salaries and Wages →				1,300				
B. Fringe Benefits (If charged as Direct Costs)				700				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2,000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				2,000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2,000				
N. Other →								
O. Total Amount of This Request →				2,000				
P. Carryover -- (If Applicable) Federal Funds: \$								
Non-Federal funds: \$								
Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

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BUDGET (Year 2)

ORGANIZATION AND ADDRESS University of Maryland Sea Grant Extension, 2020 Horn Point Rd. Cambridge, MD 21613				USDA AWARD NO.				
PROJECT DIRECTOR(S) Andrew Lazur				DURATION PROPOSED MONTHS: <u> 12 </u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: <u> </u> <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		1,300				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u> 1 </u> (Co)-PD(s)								
b. <u> </u> Senior Associates								
2. No. of Other Personnel (Non-Faculty)								
a. <u> </u> Research Associates/Postdoctorates								
b. <u> </u> Other Professionals								
c. <u> </u> Paraprofessionals								
d. <u> </u> Graduate Students								
e. <u> </u> Prebaccalaureate Students								
f. <u> </u> Secretarial-Clerical								
g. <u> </u> Technical, Shop and Other								
Total Salaries and Wages →				1,300				
B. Fringe Benefits (If charged as Direct Costs)				700				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2,000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				2,000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2,000				
N. Other →								
O. Total Amount of This Request →				2,000				
P. Carryover -- (If Applicable) Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								

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

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BUDGET (Total)

ORGANIZATION AND ADDRESS University of Maryland Sea Grant Extension, 2020 Horn Point Rd. Cambridge, MD 21613				USDA AWARD NO.				
PROJECT DIRECTOR(S) Andrew Lazur				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		2,600				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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								
Total Salaries and Wages →					2,600			
B. Fringe Benefits (If charged as Direct Costs)				1,400				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4,000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				4,000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				4,000				
N. Other →								
O. Total Amount of This Request →				4,000				
P. Carryover -- (If Applicable) Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								

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

OMB Approved 0524-0039
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BUDGET (Year 1)

ORGANIZATION AND ADDRESS Roger Williams University One Old Ferry Road, Bristol, RI 02809				USDA AWARD NO.																											
PROJECT DIRECTOR(S) Dale Leavitt & Roxanna Smolowitz				DURATION PROPOSED MONTHS: <u>12</u> Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	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 a. <u>2</u> (Co)-PD(s) b. _____ Senior Associates		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">CSREES-FUNDED WORK MONTHS</th> </tr> <tr> <th>Calendar</th> <th>Academic</th> <th>Summer</th> </tr> <tr> <td></td> <td></td> <td>0.5m ea</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>		CSREES-FUNDED WORK MONTHS			Calendar	Academic	Summer			0.5m ea				\$ 4,645 \$ 4,645															
CSREES-FUNDED WORK MONTHS																															
Calendar	Academic	Summer																													
		0.5m ea																													
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..... Total Salaries and Wages →		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>																										\$ 9,290			
B. Fringe Benefits (If charged as Direct Costs)				\$ 710																											
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$10,000																											
D. Nonexpendable Equipment																															
E. Materials and Supplies																															
F. Travel																															
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.)																															
K. Total Direct Costs (C through I) →				\$10,000																											
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 included in on/off campus bases.)																															
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$10,000																											
N. Other →																															
O. Total Amount of This Request →				\$10,000																											
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$																									
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) → - Non Cash Contributions (both Applicant and Third Party)																															
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE																									
Project Director																															
Authorized Organizational Representative																															

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

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BUDGET (Year 2)

ORGANIZATION AND ADDRESS Roger Williams University One Old Ferry Road, Bristol, RI 02809				USDA AWARD NO.			
PROJECT DIRECTOR(S) Dale Leavitt & Roxanna Smolowitz				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/ Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages	CSREES-FUNDED WORK MONTHS			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
1. No. Of Senior Personnel	Calendar	Academic	Summer	\$ 4,645			
a. <u>2</u> (Co)-PD(s)			0.5 m ea	\$ 4,645			
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.....							
Total Salaries and Wages →				\$ 9,290			
B. Fringe Benefits (If charged as Direct Costs)				\$ 710			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$10,000			
D. Nonexpendable Equipment							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				\$10,000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$10,000			
N. Other →							
O. Total Amount of This Request →				\$10,000			
P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$							
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) → - Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year T)

ORGANIZATION AND ADDRESS Roger Williams University One Old Ferry Road, Bristol, RI 02809				USDA AWARD NO.			
PROJECT DIRECTOR(S) Dale Leavitt & Roxanna Smolowitz				DURATION PROPOSED MONTHS: <u>24</u> Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		\$ 9,290			
1. No. Of Senior Personnel		Calendar	Academic	Summer	\$ 9,290		
a. <u>2</u> (Co)-PD(s)				1m ea			
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.....							
Total Salaries and Wages →					\$18,580		
B. Fringe Benefits (If charged as Direct Costs)				\$ 1,420			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				\$20,000			
D. Nonexpendable Equipment							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				\$20,000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				\$20,000			
N. Other →							
O. Total Amount of This Request →				\$20,000			
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							

BUDGET JUSTIFICATION:

SALARY: Funds are requested to support the summer salary of Drs. Dale Leavitt and Roxanna Smolowitz. Dr. Leavitt will be responsible for assisting in coordinating the shellfish outreach activities of the group and will participate in compiling literature, writing the Health HACCP Guidelines, contributing to the training of extension personnel in the northeast and coordinating the local technology transfer workshops to shellfish farmers in the Rhode Island region. He is requesting approximately 0.5m of summer salary per year (\$4,645 per year) with the fringe benefits, consisting of 7.65% FICA, for a total of \$5,000 per year for two years.

Dr. Smolowitz is also requesting approximately 0.5m of summer salary support. She will provide guidance and oversight to the extension group and will assist in the development of the Health HACCP Guidelines. She will provide technical information and review all materials generated by the Extension Group. She requests salary support of \$4,645 per year with the fringe benefits, consisting of 7.65% FICA, for a total of \$5,000 per year for two years.

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS <i>Delaware State University, 1200 N. DuPont, Hwy., Dover, DE 19901</i>				USDA AWARD NO.				
PROJECT DIRECTOR(S) <i>Dennis McIntosh</i>				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		1422				
		Calendar	Academic					Summer
1. No. Of Senior Personnel								
a. <u>1</u> (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								
Total Salaries and Wages →				1422				
B. Fringe Benefits (If charged as Direct Costs)				568				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				1990				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.) Audit Fee				10				
K. Total Direct Costs (C through I) →				2000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000				
N. Other								
O. Total Amount of This Request →				2000				
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$		
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 2)

ORGANIZATION AND ADDRESS <i>Delaware State University, 1200 N. DuPont, Hwy., Dover, DE 19901</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Dennis McIntosh</i>				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages	CSREES-FUNDED WORK MONTHS			1422			
1. No. Of Senior Personnel	Calendar	Academic	Summer				
a. <u>1</u> (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							
Total Salaries and Wages →				1422			
B. Fringe Benefits (If charged as Direct Costs)				568			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				1990			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.) Audit Fee				10			
K. Total Direct Costs (C through I) →				2000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000			
N. Other							
O. Total Amount of This Request →				2000			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS <i>Delaware State University, 1200 N. DuPont, Hwy., Dover, DE 19901</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Dennis McIntosh</i>				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
A. Salaries and Wages	CSREES-FUNDED WORK MONTHS			2844			
1. No. Of Senior Personnel	Calendar	Academic	Summer				
a. <u>1</u> (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							
Total Salaries and Wages →				2844			
B. Fringe Benefits (If charged as Direct Costs)				1136			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				3980			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.) Audit Fee				20			
K. Total Direct Costs (C through I) →				4000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000			
N. Other							
O. Total Amount of This Request →				4000			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS <i>University of Maine</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Dana Morse</i>				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
				<i>Funds Requested by Proposer</i>	<i>Funds Approved by CSREES (If different)</i>		
A. Salaries and Wages 1. No. Of Senior Personnel		CSREES-FUNDED WORK MONTHS Calendar Academic Summer		1345			
<i>a. 1 (Co)-PD(s)</i>		0.32					
<i>b. Senior Associates</i>							
2. No. of Other Personnel (Non-Faculty)							
<i>a. Research Associates/Postdoctorates</i>							
<i>b. Other Professionals</i>							
<i>c. Paraprofessionals</i>							
<i>d. Graduate Students</i>							
<i>e. Prebaccalaureate Students</i>							
<i>f. Secretarial-Clerical</i>							
<i>g. Technical, Shop and Other</i>							
Total Salaries and Wages →				1345			
B. Fringe Benefits (If charged as Direct Costs)				655			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2000			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through I) →				2000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000			
N. Other →							
O. Total Amount of This Request →				2000			
P. Carryover -- (If Applicable) Federal Funds: \$ Non-Federal funds: \$ Total \$							
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE	
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
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BUDGET (Year 2)

ORGANIZATION AND ADDRESS University of Maine				USDA AWARD NO.						
PROJECT DIRECTOR(S) Dana Morse				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)			
				<i>Funds Requested by Proposer</i>	<i>Funds Approved by CSREES (If different)</i>					
A. Salaries and Wages 1. No. Of Senior Personnel		CSREES-FUNDED WORK MONTHS Calendar Academic Summer		1345						
a. <u>1</u> (Co)-PD(s) b. ____ Senior Associates		0.32								
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 Total Salaries and Wages →										
B. Fringe Benefits (If charged as Direct Costs)				655						
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2000						
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)										
E. Materials and Supplies										
F. Travel										
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.)										
K. Total Direct Costs (C through I) →				2000						
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 included in on/off campus bases.)										
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000						
N. Other →										
O. Total Amount of This Request →				2000						
P. Carryover -- (If Applicable) Federal Funds: \$ Non-Federal funds: \$ Total \$										
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) →										
- Non Cash Contributions (both Applicant and Third Party)										
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE				
Project Director										
Authorized Organizational Representative										
Signature (for optional use)										

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS University of Maine				USDA AWARD NO.				
PROJECT DIRECTOR(S) Dana Morse				DURATION PROPOSED MONTHS: <u>24</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
				<i>Funds Requested by Proposer</i>	<i>Funds Approved by CSREES (If different)</i>			
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		2690				
		Calendar	Academic					Summer
1. No. Of Senior Personnel a. <u>1</u> (Co)-PD(s) b. _____ Senior Associates		0.64						
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								
Total Salaries and Wages →				2690				
B. Fringe Benefits (If charged as Direct Costs)				1310				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I) →				4000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000				
N. Other →								
O. Total Amount of This Request →				4000				
P. Carryover -- (If Applicable) Federal Funds: \$ _____ Non-Federal funds: \$ _____ Total \$ _____								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

CMB Approved 0824-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS University of Maryland, 1202 Symons Hall, College Park, MD 20742-5551				USDA AWARD NO.			
PROJECT DIRECTOR(S) Thomas E. Rippen				DURATION PROPOSED MONTHS: 24 Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS					
1. No. Of Senior Personnel		Calendar	Academic	Summer			
a. 1 (Co)-PD(s)		0.40			2860		
b. Senior Associates							
2. No. of Other Personnel (Non-Faculty)							
a. Research Associates/Postdoctorates							
b. Other Professionals							
c. Paraprofessionals							
d. Graduate Students							
e. Probationary Students							
f. Secretarial-Clerical							
g. Technical, Shop and Other							
Total Salaries and Wages →					2860		
B. Fringe Benefits (If charged as Direct Costs)					1140		
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →					4000		
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through J) →					4000		
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →					4000		
N. Other →							
O. Total Amount of This Request →					4000		
P. Carryover -- (If Applicable) Federal Funds: \$		Non-Federal funds: \$		Total \$			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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				W. Montgomery		2/3/10	
Signature (for optional use)				Wendy T. Montgomery		Assistant Director	

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

(OMB Approved 0524-0039
Expires 03/31/2004)

BUDGET (Year 2)

ORGANIZATION AND ADDRESS University of Maryland, 1202 Symons Hall, College Park, MD 20742-5551				USDA AWARD NO.			
PROJECT DIRECTOR(S) Thomas E. Rippen				DURATION PROPOSED MONTHS: 12	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)		
A. Salaries and Wages				CSREES-FUNDED WORK MONTHS			
1. No. Of Senior Personnel				Calendar	Academic	Summer	
a. 1 (Co)-PD(s)				0.20			1494
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							
Total Salaries and Wages →							1494
B. Fringe Benefits (If charged as Direct Costs)							506
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →							2000
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through J) →							2000
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 included in on/off campus base(s).)							
M. Total Direct and F&A/Indirect Costs (J plus K) →							2000
N. Other →							
O. Total Amount of This Request →							2000
P. Carryover -- (If Applicable) Federal Funds \$				Non-Federal funds \$		Total \$	
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative				<i>W. Montgomery</i>			2/3/10
Signature (for optional use)				Wendy T. Montgomery Assistant Director			

COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE

CMD Approved 0524-0039
Expires 03/31/2004**BUDGET (Year 1)**

ORGANIZATION AND ADDRESS University of Maryland, 1202 Symons Hall, College Park, MD 20742-5551				USDA AWARD NO.			
PROJECT DIRECTOR(S) Thomas E. Rippen				DURATION PROPOSED MONTHS: 12 Funds Requested by Proposer	DURATION PROPOSED MONTHS: _____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/Matching Funds (If required)	Non-federal Cost-Sharing/Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS					
1. No. Of Senior Personnel		Calendar	Academic	Summer			
a. 2 (Co)-PD(s).....		0.20			1494		
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							
Total Salaries and Wages..... →					1494		
B. Fringe Benefits (If charged as Direct Costs)					506		
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →					2000		
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies							
F. Travel							
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.)							
K. Total Direct Costs (C through J)..... →					2000		
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →					2000		
N. Other..... →							
O. Total Amount of This Request..... →					2000		
P. Carryover -- (If Applicable) Federal Funds: \$		Non-Federal funds: \$		Total \$			
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on 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				Wendy T. Montgomery		2/3/10	
Signature (for optional use)				Wendy T. Montgomery Assistant Director			

OMB Approved 0524-0039
Expires 03/31/2004

ORGANIZATION AND ADDRESS Cornell Cooperative Extension, 423 Griffing Ave, Riverhead, NY 11901				USDA AWARD NO.				
PROJECT DIRECTOR(S) Gregg Rivara				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS		2000				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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								
Total Salaries and Wages..... →				2000				
B. Fringe Benefits (If charged as Direct Costs)								
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J)..... →				2000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000				
N. Other								
O. Total Amount of This Request..... →				2000				
P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 2)

ORGANIZATION AND ADDRESS <i>Cornell Cooperative Extension, 423 Griffing Ave, Riverhead, NY 11901</i>				USDA AWARD NO.				
PROJECT DIRECTOR(S) <i>Gregg Rivara</i>				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS		2000				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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								
Total Salaries and Wages →				2000				
B. Fringe Benefits (If charged as Direct Costs)								
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through I)..... →				2000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000				
N. Other →								
O. Total Amount of This Request..... →				2000				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$		
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
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Signature (for optional use)								

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

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BUDGET (Total)

ORGANIZATION AND ADDRESS <i>Cornell Cooperative Extension, 423 Griffing Ave, Riverhead, NY 11901</i>				USDA AWARD NO.				
PROJECT DIRECTOR(S) <i>Gregg Rivara</i>				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages.....		CSREES-FUNDED WORK MONTHS		4000				
		Calendar	Academic					Summer
1. No. Of Senior Personnel								
a. <u>1</u> (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								
Total Salaries and Wages →				4000				
B. Fringe Benefits (If charged as Direct Costs)								
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
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K. Total Direct Costs (C through J)..... →				4000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000				
N. Other →								
O. Total Amount of This Request..... →				4000				
P. Carryover -- (If Applicable)Federal Funds: \$				Non-Federal funds: \$		Total \$		
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS <i>Sea Grant Extension COMB, 701 E Pratt St. Baltimore, MD 21202</i>				USDA AWARD NO.																																																																																																							
PROJECT DIRECTOR(S) <i>Dan Terlizzi</i>				DURATION PROPOSED MONTHS: <u>12</u>	DURATION PROPOSED MONTHS: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)																																																																																																				
A. Salaries and Wages <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;"></th> <th colspan="3" style="text-align: center; border-bottom: 1px solid black;">CSREES-FUNDED WORK MONTHS</th> <th rowspan="2" style="width: 10%;"></th> <th rowspan="2" style="width: 10%;"></th> <th rowspan="2" style="width: 10%;"></th> <th rowspan="2" style="width: 10%;"></th> </tr> <tr> <th></th> <th style="text-align: center; font-size: small;">Calendar</th> <th style="text-align: center; font-size: small;">Academic</th> <th style="text-align: center; font-size: small;">Summer</th> </tr> <tr> <td>1. No. Of Senior Personnel</td> <td></td> <td></td> <td></td> <td rowspan="3" style="text-align: center; vertical-align: middle;">1430</td> <td rowspan="3"></td> <td rowspan="3"></td> <td rowspan="3"></td> </tr> <tr> <td>a. <u>1</u> (Co)-PD(s)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>b. _____ Senior Associates</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. No. of Other Personnel (Non-Faculty)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>a. _____ Research Associates/Postdoctorates</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>b. _____ Other Professionals</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>c. _____ Paraprofessionals</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>d. _____ Graduate Students.....</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>e. _____ Prebaccalaureate Students</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>f. _____ Secretarial-Clerical</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>g. _____ Technical, Shop and Other</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total Salaries and Wages →</td> <td></td> <td></td> <td></td> <td style="text-align: center;">1430</td> <td></td> <td></td> <td></td> </tr> </table>					CSREES-FUNDED WORK MONTHS								Calendar	Academic	Summer	1. No. Of Senior Personnel				1430				a. <u>1</u> (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								Total Salaries and Wages →				1430				Funds Requested by Proposer	Funds Approved by CSREES (If different)	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
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Total Salaries and Wages →				1430																																																																																																							
B. Fringe Benefits (If charged as Direct Costs)				570																																																																																																							
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2000																																																																																																							
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N. Other..... →																																																																																																											
O. Total Amount of This Request →				2000																																																																																																							
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">P. Carryover -- (If Applicable)Federal Funds: \$</td> <td style="width: 33%;">Non-Federal funds: \$</td> <td style="width: 33%;">Total \$</td> </tr> </table>								P. Carryover -- (If Applicable)Federal Funds: \$	Non-Federal funds: \$	Total \$																																																																																																	
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Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O) Cash (both Applicant and Third Party) → - Non Cash Contributions (both Applicant and Third Party)																																																																																																											
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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 (Year 2)

ORGANIZATION AND ADDRESS <i>Sea Grant Extension COMB, 701 E Pratt St. Baltimore, MD 21202</i>				USDA AWARD NO.				
PROJECT DIRECTOR(S) <i>Dan Terlizzi</i>				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		1430				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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								
Total Salaries and Wages →				1430				
B. Fringe Benefits (If charged as Direct Costs)				570				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				2000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				2000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000				
N. Other →								
O. Total Amount of This Request →				2000				
P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
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BUDGET (Total)

ORGANIZATION AND ADDRESS <i>Sea Grant Extension COMB, 701 E Pratt St. Baltimore, MD 21202</i>				USDA AWARD NO.				
PROJECT DIRECTOR(S) <i>Dan Terlizzi</i>				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)	
A. Salaries and Wages		CSREES-FUNDED WORK MONTHS		2860				
1. No. Of Senior Personnel		Calendar	Academic					Summer
a. <u>1</u> (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								
Total Salaries and Wages →				2860				
B. Fringe Benefits (If charged as Direct Costs)				1140				
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →				4000				
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies								
F. Travel								
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.)								
K. Total Direct Costs (C through J) →				4000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000				
N. Other →								
O. Total Amount of This Request →				4000				
P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$								
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
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Signature (for optional use)								

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Expires 03/31/2004

BUDGET (Year 1)

ORGANIZATION AND ADDRESS University of Maryland WREC, POB 169, Queenstown MD 21658				USDA AWARD NO.			
PROJECT DIRECTOR(S) Donald Webster				DURATION PROPOSED MONTHS: _12_	DURATION PROPOSED MONTHS: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng 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)							
a. ____ Research Associates/Postdoctorates							
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f. ____ Secretarial-Clerical							
g. ____ Technical, Shop and Other							
Total Salaries and Wages →							
B. Fringe Benefits (If charged as Direct Costs)							
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →							
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				1000			
F. Travel				1000			
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.)							
K. Total Direct Costs (C through I)..... →				2000			
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 included in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) →				2000			
N. Other..... →							
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P. Carryover -- (If Applicable)Federal Funds: \$ Non-Federal funds: \$ Total \$							
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)							
Cash (both Applicant and Third Party) →							
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BUDGET (Year 2)

ORGANIZATION AND ADDRESS <i>University of Maryland WREC, POB 169, Queenstown MD 21658</i>				USDA AWARD NO.			
PROJECT DIRECTOR(S) <i>Donald Webster</i>				DURATION PROPOSED MONTHS: <u>12</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng Funds Approved by CSREES (If Different)
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		Calendar	Academic	Summer			
1. No. Of Senior Personnel							
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2. No. of Other Personnel (Non-Faculty)							
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g. ____ Technical, Shop and Other							
Total Salaries and Wages →							
B. Fringe Benefits (If charged as Direct Costs)							
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →							
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				1000			
F. Travel				1000			
G. Publication Costs/Page Charges							
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Cash (both Applicant and Third Party) →							
- Non Cash Contributions (both Applicant and Third Party)							
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

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

OMB Approved 0524-0039
Expires 03/31/2004

BUDGET (Total)

ORGANIZATION AND ADDRESS <i>University of Maryland WREC, POB 169, Queenstown MD 21658</i>				USDA AWARD NO.				
PROJECT DIRECTOR(S) <i>Donald Webster</i>				DURATION PROPOSED MONTHS: <u>24</u> <i>Funds Requested by Proposer</i>	DURATION PROPOSED MONTHS: _____ <i>Funds Approved by CSREES (If different)</i>	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost- Sharing/Matchi ng 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)								
a. ____ 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 →								
B. Fringe Benefits (If charged as Direct Costs)								
C. Total Salaries, Wages, and Fringe Benefits (A plus B) →								
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies				2000				
F. Travel				2000				
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.)								
K. Total Direct Costs (C through I) →				4000				
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 included in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) →				4000				
N. Other								
O. Total Amount of This Request →				4000				
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$		
Q. Cost-Sharing/Matching (Breakdown of total amounts shown on line O)								
Cash (both Applicant and Third Party) →								
- Non Cash Contributions (both Applicant and Third Party)								
AME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)		DATE		
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

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

OMB Approved 0524-0039

**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: Deborah A. Bouchard

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an "x". Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Beane, Dawna	X	X		
Bayer, Robert		X		
Basti, David	X	X	X	
Bricknell, Ian	X	X		
Coll, John	X	X		
Ellis, Stephen	X	X		
Fast, Mark		X		
Ferguson, Hugh	X			
Giray, Cem	X	X		
Gustafson, Lori	X	X		
Hawkins, Leighanne	X	X		
Hoyt, Kenneth	X		X	
Kim, Carol		X		
Keleher, William		X		
Lichtenwalner, Anne	X	X		Director
MacLean, Sharon	X	X		
MacPhee, Daniel	X			
Marenghi, Frank	X			
Merrill, Peter	X	X		
Molloy-Dixon Sally		X		
Dana Morse		X		
Nelson, Marcy	X			
Opitz, Michael H.	X	X		
Pietrak, Michael	X	X	X	
Rolland, Jill	X	X		
Smolowitz, Roxanna		X		
Sowles, John		X		
Warg, Janet	X			
Wilson, Carl		X		
Winton, Jim	X			

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Name: Joseph K. Buttner

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

[illegible]

November 21, 2008

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

OMB Approved 0524-0039
Expires 03/31/2004

**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: ____Joseph K. Buttner_____

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐x☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Gary Karr	X			
Scott Weston	X			
Brian Beal	X			
Kathryn Pikora	X			
Dale Leavitt	X			
Don Webster	X			
Gef Flimlin	X			
Mark Fregeau	X			
Tessa Getchis	X			
Dave Alves	X			
Bill Burt	X			
Diane Murphy	X			
Cliff Goudey	X			
Rollie Barnaby	X			
Chris Bartlett	X			
Bill Raymond		X		
Anthony Murawski	X			
Jack Grundstrum	X			
Bonnie McAneney	X			
Bill Walton	X			
Craig Hollingsworth	X			
Brandy Wilbur (Moran)	X			
John Ewart	X			
Ann Faulds	X			
Doris Hicks	X			
Jurij Homziak	X			

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 .5 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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

OMB Approved 0524-0039
Expires 03/31/2004

**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: _____ John W. Ewart _____

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐x☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Chigbu, Paulinus		x		
Coyne, Kathy		x		
Farrell, Joe	x	x		
Gardner, Jeffrey		x		
Govindasamy, Ramu	x	x		
Hicks, Doris		x		
Kendall, Lindsay	x	x		
Kraeuter, John		x		
Liu, Bin		x		
Marsh, Adam	x	x		
McIntosh, Dennis	x	x		
Miller, Doug	x	x		
Myers, Joseph	x	x		
O'Dierno, Linda	x	x		
Ozbay, Gulnihal		x		
Parveen, Salina		x		
Puduri, Venkata		x		
Slack, David		x		
Swartzenberg, Jim		x		
Rheault, Bob		x		
Richards, Gary		x		
Rivara, Gregg		x		
Yang, Zhiming		x		
You, Yumin		x		

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Name: Ann M. Faulds

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

[illegible]

UNITED STATES DEPARTMENT OF AGRICULTURE
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE
ASSURANCE STATEMENT(S)

OMB approved 0524-0039

STATEMENT OF POLICY - Institutions receiving CSREES funding for research are responsible for protecting human subjects, providing humane treatment of animals, and monitoring use of recombinant DNA. To provide for the adequate discharge of this responsibility, CSREES policy requires an assurance by the institution's Authorized

Organizational Representative (AOR) that appropriate committees in each institution have carried out the initial reviews of protocol and will conduct continuing reviews of supported projects. CSREES also requires AOR certification by citing a timely date that an appropriate committee issued an approval or exemption.

NOTE: Check appropriate statements, supplying additional information when necessary.

1. INSTITUTION

2. CSREES PROJECT NUMBER OR
AWARD NUMBER (if known)

3. PROJECT DIRECTOR(S)

4. TITLE OF PROJECT

A. BIOSAFETY OF RECOMBINANT DNA

- ☐ Project does not involve recombinant DNA.
- ☐ Project involves recombinant DNA and was either approved () or determined to be exempt () from the NIH Guidelines by an Institutional Biosafety Committee (IBC) on _____ (Date).

This performing organization agrees to assume primary responsibility for complying with both the intent and procedures of the National Institutes of Health (NIH), DHHS Guidelines for Research Involving Recombinant DNA Molecules, as revised.

B. CARE AND USE OF ANIMALS

- ☐ Project does not involve vertebrate animals.
- ☐ Project involves vertebrate animals and was approved by the Institutional Animal Care and Use Committee (IACUC) on _____ (Date).

This performing organization agrees to assume primary responsibility for complying with the Animal Welfare Act (7 USC, 2131-2156), Public Law 89-544, 1966, as amended, and the regulations promulgated thereunder by the Secretary of Agriculture in 9 CFR Parts 1, 2, 3, and 4. In the case of domesticated farm animals housed under farm conditions, the institution shall adhere to the principles stated in the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, Federation of Animal Science Societies, 1999.

C. PROTECTION OF HUMAN SUBJECTS

- ☐ Project does not involve human subjects.
- ☐ Project involves human subjects and
- ☐ Was approved by the Institutional Review Board (IRB) on _____ (Date). Performing Institution holds a Federalwide assurance number _____; if not, a Single Project Assurance is required.
- ☐ Is exempt based on exemption number _____.
- ☐ Specific plans involving human subjects depend upon completion of survey instruments, prior animal studies, or development of material or procedures. No human subjects will be involved in research until approved by the IRB and a revised Form CSREES-2008 is submitted.

This performing organization agrees to assume primary responsibility for complying with the Federal Policy for Protection of Human Subjects as set forth in 45 CFR Part 46, 1991, as amended, and USDA regulations set forth in 7 CFR 1c, 1992. All nonexempt research involving human subjects must be approved and under continuing review by an IRB. If the performing organization submits a Single Project Assurance, supplemental information describing procedures to protect subjects from risks is required.

SIGNATURE OF AUTHORIZED ORGANIZATIONAL REPRESENTATIVE

TITLE

DATE

Instructions for Completing Assurance Statements and Certifications of Protection from Research Risks

STATEMENT OF POLICY - Institutions receiving CSREES funding for research are responsible for protecting human subjects, providing humane treatment of animals, and monitoring the use of recombinant DNA. To provide for the adequate discharge of this responsibility, CSREES policy requires an assurance by the institution's Authorized Organizational Representative (AOR) that appropriate committees in each institution have carried out the initial review of protocols and will conduct continuing reviews of supported projects. CSREES also requires AOR certification by citing a timely date that an appropriate committee issued an approval or exemption.

If a research proposal covers multiple projects in which experimental protocols vary, the AOR must provide documentation of certification, through multiple copies of Form CSREES-2008, by the appropriate committee(s) for each specific protocol utilized in the projects. Examples of multiple project/proposals may include large multi-faceted special grants, multi-institutional consortia, multi-state research projects and some large umbrella Hatch proposals.

Formula funded activities require a certification of action taken by appropriate committees, which necessitates inclusion of the date of the action; the designation of 'pending' is not an option. The designation of 'pending' may be inserted for other grant proposals in lieu of reporting a date of certification that an appropriate committee took action. However, a subsequent approval must be obtained, and a revised Form CSREES-2008 must be submitted before a final award can be made.

A. BIOSAFETY OF RECOMBINANT DNA

If the project involves the use of recombinant DNA molecules, the performing organization shall assume primary responsibility for complying with both the intent and procedures of the National Institutes of Health (NIH), DHHS, Guidelines for Research Involving Recombinant DNA Molecules, as revised:

<http://www4.od.nih.gov/oba/rac/guidelines/guidelines.html>

This responsibility includes:

1. Ensuring that a standing Institutional Biosafety Committee (IBC) is maintained in accordance with Part IV of the NIH Guidelines and also ensuring that the research plan is reviewed and approved by the IBC prior to commencing substantive work under the project. Actions by the IBC must be documented in Section A of the Form CSREES-2008.
2. Registering with the IBC all experiments involving recombinant DNA molecules conducted with funds provided under the project and complying with the containment requirements specified in Part III of the NIH Guidelines. Records of this research must be kept in a form that is available to CSREES upon request.

In addition, the funded recipient must report the following supplemental data to CSREES and to the reviewing IBC:

- a. New technical information relating to risks and safety procedures.
- b. Serious accidents or releases involving recombinant DNA.
- c. Serious illness of a laboratory worker which may be project related.
- d. Other safety problems.

For serious adverse events, see Appendix M-I-C-4 Safety Reporting of the NIH, DHHS Guidelines for Research Involving Recombinant DNA Molecules, as revised, at:

http://www4.od.nih.gov/oba/rac/guidelines_02/APPENDIX_M.htm#_APPENDIX_M-I-C-4_Safety

IBC review and approval or exemption must be documented in Section A of the Form CSREES-2008. The approval date should reflect a timely review and not older than 36 months.

B. CARE AND USE OF ANIMALS

The responsibility for the humane care and treatment of vertebrate animals used in any research project supported with CSREES funds rests with the performing organization. If a project involves animals, except farm animals used for food and fiber research, the personnel identified with the project, and the endorsing officials of the recipient's organization must comply with the Animal Welfare Act (AWA). The AWA (7 USC 2131-2156; Public Law 89-544, 1966, as amended) and the regulations promulgated thereunder by the Secretary of Agriculture (9 CFR Parts 1, 2, 3, and 4, and subsequent rules and regulations) that pertain to the care, handling, and treatment of vertebrate animals held or used for research, teaching, or other activities supported by Federal awards are published at:

<http://www.nal.usda.gov/awic/legislat/awicregs.htm>

In the case of laboratory animals used or intended for use in research, the institution shall adhere to the principles enunciated in the Guide for the Care and Use of Laboratory Animals, (ILAR, National Academy of Sciences); 1996:

<http://www.nap.edu/readingroom/books/labrats/>

and to the USDA regulations and standards issued under the public laws stated above. In case of a conflict between the guidelines, the higher standard of care shall be used.

When domesticated farm animals are used or intended for use in agricultural food and fiber production research, teaching or other activities and housed under farm conditions, the institution shall adhere to the principles stated in the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, 1999 which is available from the Federation of Animal Science Societies, 1111 N Dunlap, Savoy, IL 61874.

<http://www.fass.org/publications.asp>

Prior to commencing research activities with vertebrate animals, all protocols involving animals in CSREES funded projects must be approved by the Institutional Animal Care and Use Committee (IACUC):

<http://grants.nih.gov/grants/olaw/olaw.htm>

IACUC review and approval must be documented in Section B of the Form CSREES-2008. The approval date should reflect a timely review and not older than 36 months.

C. PROTECTION OF HUMAN SUBJECTS

The performing organization is responsible for protecting the rights and welfare of any human subject involved in CSREES sponsored research and related activities. If a research project protocol involves the use of human subjects, the institution must agree to comply with the Department of Health and Human Services' (DHHS) regulations on the protection of human subjects:

<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>

as set forth in 45 CFR Part 46, 1991, as amended (formally adopted as The 'Common Rule'), and USDA regulations set forth in 7 CFR 1c, 1992. If a research project protocol involves the use of human subjects, one and only one of the three options outlined under section C of Assurance Form 2008 must be completed.

Definitions pertaining to this regulation include:

Human subject means a living individual about whom the investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual, or identifiable private information.

Research means a systematic investigation, including research development, testing and evaluation, designed to develop generalizable knowledge. For example, some demonstration and service programs may include research activities.

Intervention includes both physical procedures by which data are gathered and manipulations of the subject that are performed for research purposes.

Interaction includes communication or interpersonal contact (e.g., surveys) between investigator and subject.

Private information includes information which is individually identifiable and the individual can reasonably expect will not be made public.

All research protocols involving human subjects must be approved and undergo continuing review by an Institutional Review Board (IRB). If the performing organization qualifies for Federalwide Assurance (FWA) status and has been approved by the Office for Human Research Protections (OHRP), DHHS, then report the assurance number along with the approval date. A list of IRBs with FWA status is available at:

<http://ohrp.cit.nih.gov/search/asearch.asp#ASUR>

If the performing organization does not have FWA status, a Single Project Assurance (SPA) form may be obtained from OHRP, DHHS at:

<http://www.hhs.gov/ohrp/humansubjects/assurance/asur.htm>

and must be submitted. A SPA is a document to assure compliance and continuing review of the project being proposed, and it is limited in use and duration to this individual research activity. A SPA signed by the IRB Chairperson, AOR, and Project Director of the research project must be submitted. Also, provide additional information regarding the recruitment and selection of subjects, the proposed processes of informed consent and maintenance of confidentiality, and risk and benefit assessments for review by CSREES staff. An institution submitting a SPA may utilize its own IRB or the IRB of a neighboring institution.

The IRB approval date should reflect a timely review. The date reported in section C of the Assurance Form 2008 should not be older than twelve months, because the 'Common Rule' requires annual review.

Research activities in which the only involvement of human subjects is in one or more of the following categories are exempt from IRB review:

1. Research conducted in established or commonly accepted educational settings.
2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless information obtained is recorded in such a manner that human subjects can be identified, and any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk or be damaging.
3. Research not exempt in #2 may be exempt if, in the use of educational tests, the subjects are elected or appointed officials, or federal statutes require that confidentiality will be maintained.
1. Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.
2. Research and demonstration projects which are designed to study, evaluate, or otherwise examine public benefit or service programs.
3. Taste and food quality evaluation and consumer acceptance studies.

It is typically the responsibility of the IRB or AOR, and not the Program Director, to determine whether research activities qualify for an exemption. A complete explanation of these exemptions can be found at:

<http://www.hhs.gov/ohrp/humansubjects/guidance/basics.htm#Exempt>

A project may be funded but temporarily excused from IRB approval if specific protocols involving human subjects depend upon the development of survey instruments, procedures or materials, or completion of animal studies. However, human subjects may not be involved in research activities until IRB approval is obtained and a revised Form CSREES-2008 is submitted.

Certifications

The following instructions and forms are included for informational purposes only. Certifications are accomplished by signing Form CSREES-2002, Proposal Cover Page. Please read the following certification statements located in this kit:

1. Certifications Regarding Drug-Free Workplace Requirements (Alternatives I and II)
2. Debarment or Suspension Requirements (Primary and Lower Tier-Covered Transactions)
3. Notice to Applicants - Certification/Disclosure Requirements Related to Lobbying

U.S. DEPARTMENT OF AGRICULTURE

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989 Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) have not within a three-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name(s) and Title(s) of Authorized Representative(s)

**DO NOT SIGN THIS FORM - CERTIFICATION IS PROVIDED WHEN THE APPLICANT SIGNS THE CSREES-2002,
"PROPOSAL COVER PAGE."**

Signature(s)

Date

Instructions for Certification

1. By signing and submitting this form, the prospective primary participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out on this form. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this form that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

U.S. DEPARTMENT OF AGRICULTURE

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name(s) and Title(s) of Authorized Representative(s)

Signature(s)

Date

Instructions for Certification

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," without modification, in all lower tier covered transaction and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

UNITED STATES DEPARTMENT OF AGRICULTURE
CERTIFICATION REGARDING
DRUG-FREE WORKPLACE REQUIREMENTS (GRANTS)
ALTERNATIVE I - FOR GRANTEEES OTHER THAN INDIVIDUALS

This certification is required by the regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 *et seq.*), 7 CFR Part 3017, Subpart F, Section 3017.600, Purpose. The January 31, 1989, regulations were amended and published as Part II of the May 25, 1990 **Federal Register** (pages 21681-21691). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the grant.

(Before completing Certification, read instructions on page 2)

Alternative I

A. The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about --

- (1) The dangers of drug abuse in the workplace;
- (2) The grantee's policy of maintaining a drug-free workplace;
- (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
- (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --

- (1) Abide by the terms of the statement; and
- (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

(e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such

notices. Notice shall include the identification number(s) of each affected grant;

Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted --

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, State, zip code)

Check ☐ if there are workplaces on file that are not identified here.

Organization Name

Award Number or Project Name

Name and Title of Authorized Representative

DO NOT SIGN THIS FORM - CERTIFICATION IS PROVIDED WHEN THE APPLICANT SIGNS THE CSREES-2002, "PROPOSAL COVER PAGE."

Signature

Date

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the grantee is providing the certification set out on pages 1 and 2.
2. The certification set out on pages 1 and 2 is a material representation of fact upon which reliance is placed when the agency awards the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, the agency, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.
3. Workplaces under grants, for grantees other than individuals, need not be identified on the certification. If known, they may be identified in the grant application. If the grantee does not identify the workplaces at the time of application, or upon award, if there is no application, the grantee must keep the identity of the workplace(s) on file in its office and make the information available for Federal inspection. Failure to identify all known workplaces constitutes a violation of the grantee's drug-free workplace requirements.
4. Workplace identifications must include the actual address of buildings (or parts of buildings) or other sites where work under the grant takes place. Categorical descriptions may be used (e.g., all vehicles of a mass transit authority or State highway department while in operation, State employees in each local unemployment office, performers in concert halls or radio studios).
5. If the workplace identified to the agency changes during the performance of the grant, the grantee shall inform the agency of the change(s), if it previously identified the workplaces in question (see paragraph three).
6. Definitions of terms in the Nonprocurement Suspension and Debarment common rule and Drug-

Free Workplace common rule apply to this certification. Grantees' attention is called, in particular, to the following definitions from these rules:

"Controlled" substance means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C. 812) and as further defined by regulation (21 CFR 1308.11 through 1308.15);

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, use, or possession of any controlled substance;

"Employee" means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) all "direct charge" employees; (ii) all "indirect charge" employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantee's payroll; or employees of subrecipients or subcontractors in covered workplaces).

U.S. DEPARTMENT OF AGRICULTURE

**CERTIFICATION REGARDING
DRUG-FREE WORKPLACE REQUIREMENTS (GRANTS)
ALTERNATIVE II - FOR GRANTEEES WHO ARE INDIVIDUALS**

This certification is required by the regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 *et seq.*), 7 CFR Part 3017, Subpart F, Section 3017.600, Purpose. The January 31, 1989, regulations were amended and published as Part II of the May 25, 1990 *Federal Register* (pages 21681-21691). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the grant.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS BELOW)

Alternative II

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

Organization Name

Award Number or Project Name

**DO NOT SIGN THIS FORM - CERTIFICATION IS PROVIDED WHEN THE APPLICANT SIGNS THE
CSREES-2002, "PROPOSAL COVER PAGE."**

Name(s) and Title(s) of Authorized Representative(s)

Signature(s)

Date

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the grantee is providing the certification set out on page 1.
2. The certification set out on page 1 is a material representation of fact upon which reliance is placed when the agency awards the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, the agency, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.
3. Workplaces under grants, for grantees other than individuals, need not be identified on the certification. If known, they may be identified in the grant application. If the grantee does not identify the workplaces at the time of application, or upon award, if there is no application, the grantee must keep the identity of the workplace(s) on file in its office and make the information available for Federal inspection. Failure to identify all known workplaces constitutes a violation of the grantee's drug-free workplace requirements.
4. Workplace identifications must include the actual address of buildings (or parts of buildings) or other sites where work under the grant takes place. Categorical descriptions may be used (e.g., all vehicles of a mass transit authority or State highway department while in operation, State employees in each local unemployment office, performers in concert halls or radio studios).
5. If the workplace identified to the agency changes during the performance of the grant, the grantee shall inform the agency of the change(s), if it previously identified the workplaces in question (see paragraph three).
6. Definitions of terms in the Nonprocurement Suspension and Debarment common rule and Drug-Free Workplace common rule apply to this certification. Grantees' attention is called, in particular, to the following definitions from these rules:

"Controlled substance" means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C. 812) and as further defined by regulation (21 CFR 1308.11 through 1308.15);

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, use, or possession of any controlled substance;

"Employee" means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) all "direct charge" employees; (ii) all "indirect charge" employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantee's payroll; or employees of subrecipients or subcontractors in covered workplaces).

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

**NOTICE TO APPLICANTS - CERTIFICATION/DISCLOSURE REQUIREMENTS
RELATED TO LOBBYING**

Section 319 of Public Law 101-121 (31 U.S.C.), signed into law on October 23, 1989, imposes new prohibitions and requirements for disclosure and certification related to lobbying on recipients of Federal contracts, grants, cooperative agreements, and loans. Certain provisions of the law also apply to Federal commitments for loan guarantees and insurance; however, it provides exemptions for Indian tribes and tribal organizations.

Effective December 23, 1989, current and prospective recipients (and their subtier contractors and/or subgrantees) will be prohibited from using Federal funds, other than profits from a Federal contract, for lobbying Congress or any Federal agency in connection with the award of a particular contract, grant, cooperative agreement or loan. In addition, for each award action in excess of \$100,000 (or \$150,000 for loans) on or after December 23, 1989, the law requires recipients and their subtier contractors and/or subgrantees to: (1) certify that they have neither used nor will use any appropriated funds for payment to lobbyists; (2) disclose the name, address, payment details, and purpose of any agreements with lobbyists whom recipients or their subtier contractors or subgrantees will pay with profits or **non-appropriated** funds on or after December 23, 1989; and (3) file quarterly updates about the use of lobbyists if materials changes occur in their use. The law establishes civil penalties for noncompliance.

If you are a current recipient of funding or have an application, proposal, or bid pending as of December 23, 1989, the law will have the following immediate consequences for you:

- You are prohibited from using appropriated funds (other than profits from Federal contracts) on or after December 23, 1989, for lobbying Congress or any Federal agency in connection with a particular contract, grant, cooperative agreement, or loan;
- you are required to execute the attached certification at the time of submission of an application or before any action in excess of \$100,000 is awarded; and
- you will be required to complete the lobbying disclosure form if the disclosure requirements apply to you.

Regulations implementing Section 319 of Public Law 101-121 have been published as an Interim Final Rule by the Office of Management and Budget as Part III of the February 26, 1990, **Federal Register** (pages 6736-6746).

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

**CERTIFICATION REGARDING LOBBYING - CONTRACTS, GRANTS, LOANS
AND COOPERATIVE AGREEMENTS**

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement;

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this

Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions;

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Organization Name

Award Number or Project Name

Name and Title of Authorized Representative

DO NOT SIGN THIS FORM - CERTIFICATION IS PROVIDED WHEN THE APPLICANT SIGNS THE CSREES-2002, "PROPOSAL COVER PAGE."

Signature

Date

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

OMB Approved 0524-0039
Expires 03/31/2004

**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: G E Flimlin

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☒x☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Tessa Getchis		x		
Don Webster	x	x		
John Ewart	x	x		
Don Meritt		x		
Jurij Homziak		x		
Joseph Buttner	x	x		
David Alves		x		
William Burt		x		
John Kraeuter	x	x		
Susan Ford		x		
David Bushek		x		
Eric Powell		x		
Mike Timmons		x		
Dan Terlizzi		x		
Jackie Takacs		x		
Ken Semmens		x		
Amy Wilbur		x		
Paul Bologna		x		
Chester Zarnoch		x		
Brian Beal		x		
Mike Rice		x		
Robert Pomeroy	x	x		
Dale Leavitt		x		
Dennis Macintosh		x		
Ann Faulds		x		
Doris Hicks		x		

According to the aperwork 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 .5 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Form CSREES 2007

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

OMB Approved 0524-0039
Expires 03/31/2004

**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: ____Tessa Getchis_____

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐x☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

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- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Bill Burt		X		
Paul Bowser		x		
Deborah Bouchard		X		
Joseph Buttner		X		
John Ewart		X		
Ann Faulds		X		
Gef Flimlin	x	X		
Reggie Harrell		x		
Doris Hicks		X		
Craig Hollingsworth		X		
Jurij Homziak		X		
Ken La Valley		X		
Andrew Lazur		X		
Dale Leavitt	x	X		
Dennis McIntosh		X		
Dana Morse	x	X		
Diane Murphy		X		
Mike Pietrak		X		
Robert Pomeroy	x	X		
Mike Rice	x	X		
Joshua Reitsma		x		
Tom Rippen		X		
Gregg Rivara		X		
Kenneth Semmens				
Roxanna Smolowitz		x		
Jackie Takacs		X		
Dan Terlizzi		X		
Don Webster		X		
Brandy Wilbur (Moran)		X		
Sandra Shumway		x		

David Bengtson	x	x		
Sylvain De Guise	x	x		
Nancy Balcom	x	x		
Inke Sunila	x	x		
David Carey	x			
Kristen Bellantuono	x			
Cori Rose	x			
Paula Kullberg	x			
Shannon Kelly	x			
Jamie Vaudrey	x	x		
Jim Kremer	x	x		
James Markow	x	x		
Dan Cheney	x	x		
Jonathan Davis		x		
Mark Luckenbach		X		
Dror Angel		X		
Brett Dumbauld		x		
Peter Nelson		x		
Vijay Panchang		x		
Robert Rheault		x		
John Richardson	x	x		
Carter Newell	x	x		
Cary Chadwick		x		
Chris Davis		x		
Anthony Hawkins		x		

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0524-0039

Name: Doris T Hicks

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Buttner, Joseph		X		
Chen, Haiqiang	X	X		
Collette, Robert	X			
DeVlieger, Debra	X	X		
Ewart, John		X		
Faulds, Ann		X		
Falk, James		X		
Flimlin, Gef		X		
Gall, Ken	X	X		
Garrido, Victor	X	X		
Getchis, Tessa	X	X		
Green, David	X	X		
Hollingsworth, Craig		X		
Hoover, Dallas	X	X		
Kern, Steve		X		
Kniel, Kali	X	X		
Luzur, Andy		X		
Jahncke, Michael	X	X		
Joerger, Rolf	X			
Kingsley, David	X	X		

Mann, Heather		X		
McDermott, Ryan	X	X		
McIntosh, Dennis		X		
Moody, Diane		X		
Morrissey, Michael	X	X		
Morse, Dana		X		
Nash, Barry	X	X		
Neetoo, Huda	X	X		
Otwell, Steven	X	X		
Pivarnik, Lori	X	X		
Raab, Carolyn		X		
Rasmusen, Rosalie		X		
Richard, Nicole	X	X		
Rippen, Thomas	X	X		
Tom, Pamela	X	X		
Villalba, Abigail	X	X		
Webster, Don		X		
Wilmes, Jennifer	X	X		

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 .5 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

CONFLICT OF INTEREST LIST

Name:

Instructions:

- Who completes this template: Each project director/principal investigator (PD/PI) or other person that the Request for Applications (RFA) specifies
- How this template is completed:
 - List alphabetically – with last name first -- the full names of the following individuals:
 - All co-authors on publications within the past three years, including pending publications and submissions
 - All collaborators on projects within the past three years, including current and planned collaborations
 - All thesis or postdoctoral *advisees/advisors*
 - All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past three years
- Indicate the person's relationship to you (Co-Author, Collaborator, etc) with an "x".

Additional pages may be used as necessary.

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Antonelli, Art	x			
Baldwin, Reed	x			
Bechinski, Edward	x			
Bragg, David	x			
Clark, John Marshal	x			
Cohen, Nancy	x			
Coli, William	x			
Ellis, Reagan	x			
Fisher, Glenn	x			
Gangloff-Kaufman, Jody	x			
Hahn, Jeff	x			
Hansen, Laurel	x			
Jepson, Paul			x	
Hazzard, Ruth N.			x	
Hilton, Rick	x			
Kard, Bruce	x			
Kesecker, Rene	x			
Kwon, D.H.	x			
LaBonte, John	x			
Laus, Mary Jane	x			
Lee, S.H	x			

McGrath, Dan	x			
Murray, Kathleen			x	
Olson, Rita B.	x			
Rich, Stephen			x	
Rinehold, John	x			
Rondon, Silvia	x			
Sheppard, S. Warren	x			
Soares, Scott	x			
Strycharz, J.P	x			
Waldvogel, Michael	x			
Wilda, Keith	x			
Yoon, K,	x			

This file MUST be converted to PDF prior to attachment in the electronic application package.

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

OMB Approved 0524-0039
Expires 03/31/2004

CONFLICT OF INTEREST LIST FOR COMPETITIVE PROGRAMS ONLY

Name: Kenneth J. La Valley

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

[illegible]

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 .5 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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

OMB Approved 0524-0039

**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: Andrew Lazur_____

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an “x”. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Frank Chapman	x			
Geoff Wallat	x			
Deborah Pouder		x		
Steve Early	x			
John Jacobs	x			
Ken Semmems		x		
Roger Viadero		X		
Todd West		X		
Karen Buzby		X		
Dennis McIntosh		X		
Erin Ryder Markin		X		
Brain Richardson		X		
Bill Van Huekelem		X		
Mike Timmons	X			
Fred Wheaton		X		
Ana Baya	X			
Joe Lepo	X			
Richard Snyder	X			
Keith Goldman	X			
Mark Rath	X			
Bill Shelton	X			
Boris Gomelsky	X			
Frank Leteux	x			
Richard Schuck		X		
Tom Rippen		X		
Mike Jahnke		X		
Mike Schwarz		x		

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CONFLICT OF INTEREST LIST FOR COMPETITIVE PROGRAMS ONLY

Name: Dale Leavitt

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

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- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

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[illegible]

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**CONFLICT OF INTEREST LIST
FOR COMPETITIVE PROGRAMS ONLY**

Name: Dr. Dennis McIntosh

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Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Blank, Grant	X	X		
Brown, Lori	X	X		
Buzby, K.		X		
Chambers, Chris		X		
Collins, Craig	X			
Cordy, Gail	X			
Clark, John	X	X		
Elliot, Jack			Advisor	
Ewart, John	X			
Fitzsimmons, Kevin	X	X	Advisor	
Fox, Dewayne	X	X		
Furlong, Edward T.	X			
Glenn, Ed			Advisor	
Gross, Timothy S.	X			
Harrell, R. M.		X		
Jacobs, John	X	X		
Knight, James			Advisor	
Kolpin, Dana W.	X			
Lightner, Don			Advisor	
(Marken) Ryder, Erin		X		
Martin, Brandon	X			
McKee, David A.	X		Advisor	
Neves, Kevin	X		Advisee	
Paretti, Nicholas V.	X			
Rhodes, M.	X			
Samocha, Tzachi M.	X	X	Advisor	
Stevens, Carol	X			
Viadero, R. C.		X		
Walker, David	X			
West, T.		X		
Wujtewicz, Don		X		
Zaugg, Steven D.	X			

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CONFLICT OF INTEREST LIST FOR COMPETITIVE PROGRAMS ONLY

Name: Dana L. Morse

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- All collaborators on projects within the past four years, including current and planned collaborations
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[illegible]

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CONFLICT OF INTEREST LIST FOR COMPETITIVE PROGRAMS ONLY

Name: Diane C. Murphy

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

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[illegible]

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CONFLICT OF INTEREST LIST

Name: Robert Pomeroy

Instructions:

- Who completes this template: Each project director/principal investigator (PD/PI) or other person that the Request for Applications (RFA) specifies
- How this template is completed:
 - List alphabetically – with last name first -- the full names of the following individuals:
 - All co-authors on publications within the past three years, including pending publications and submissions
 - All collaborators on projects within the past three years, including current and planned collaborations
 - All thesis or postdoctoral *advisees/advisors*
 - All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past three years
- Indicate the person's relationship to you (Co-Author, Collaborator, etc) with an "x".

Additional pages may be used as necessary.

Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Maliao, R.J.,	x			
R. G. Turingan	x			
Kim Anh Thi Nguyen	x	x		
Ha Xuan Thong	x	x		
N. Salayo	x			
L. Garces	x	x		
M. Pido	x	x		
K. Viswanathan,	x			
M. Ahmed	x			
I. Siason	x	x		
K. Seng	x			
A. Masae	x			
T. Campson	x		x	
F. Douvere	x			
J.F.A. Pontillas, ,	x	x		
B.S. Francisco,	x			
A.T. White	x			
E.M.C. Ponce de Leon	x			
J.Parks,	x			
R.Pollnac	x	x		

This file MUST be converted to PDF prior to attachment in the electronic application package.

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CONFLICT OF INTEREST LIST FOR COMPETITIVE PROGRAMS ONLY

Name: Joshua Reitsma

For each project director (PD) and other personnel that are required based on the specific program guidelines, list alphabetically by last name (and with last name first), the full names of individuals in the following categories and mark each category which applies with an ☐. Additional pages may be used as necessary. A conflict of interest list for each PD must be submitted before a proposal is considered complete. Inclusion of a C.V. or publication list in the proposal is not sufficient.

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[illegible]

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Name: Michael A. Rice

- All co-authors on publications within the past four years, including pending publications and submissions
- All collaborators on projects within the past four years, including current and planned collaborations
- All thesis or postdoctoral *advisees/advisors*
- All persons in your field with whom you have had a consulting/financial arrangement/other conflict-of-interest in the past four years

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**CONFLICT OF INTEREST LIST
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Name: Thomas E. Rippen

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Note: Other individuals working in the applicant's specific area are not in conflict of interest with the applicant unless those individuals fall within one of the listed categories.

Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Bell, Jon		X		
Brohawn, Kathy		X		
Butler, Erin	X			
DePaola, Andrew		X		
Eberly, Noreen		X		
Ewert, John		X		
Flemlin, Gef		X		
Flick, George		X		
Gall, Ken		X		
Garrett, E. Spencer	X			
Gates, Keith		X		
Green, Dave		X		
Getchis, Tessa		X		
Hettiarachchi, Kumudini			X	
Hicks, Doris		X		
Holmes, Ingrid		X		
Jahncke, Michael		X		
Lazur, Andrew		X		
Lipton, Douglas		X		
McKenzie, Shaun			X	
Moody, D.		X		
Morrissey, Michael		X		
Otwell, Stephen	X	X		
Pagadala, Sivaranjana			X	
Parveen, Salina		X		
Pivarnik, Lori		X		
Schwarz, Jurgen		X		

Schwarz, Michael		X		
Senkel, Arthur	X			
Sieling, William		X		
Skonberg, Denise	X			
Suvanich, Voranuch		X		
Tamplin, Mark		X		
Tyler, Carla			X	
Waters, Sharon		X		
Webster, Don		X		
Weidmann, Martin		X		
Yoon, Kisun		X		
Zoumenou, Virginie		X		

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Name: Gregg Rivara

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**CONFLICT OF INTEREST LIST
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Name: Roxanna Smolowitz

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Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Jackie De Faveri	x		x	
Steven Roberts	x	x		
Gary Wikfors	x	x		
Sandy Shumway	x	x		
Inke Sunila	x	x		
Helene Hegaret	x		x	
Robert Quinn	x		x	
Andrei Chistoserdov	x	x		
Rebecca Gast	x	x		
Dale Leavitt	x	x		
Tim Scott	x	x		
Connie Audemard	x		x	
Maille Lyons	x		x	
Kim Reese	x		x	
Marta Gomez-Chiarri	x	x		
Debra Brouchard	x	x		
Anne Li				
Paul Bowser	x	x		
Bassam Allam	x	x		
Evan Ward	x	x		
Sal Frasca	x			
Dave Groman	x			
Mark Fast	x	x		
Susan Ford	x	x		
Chris Dungan	x	x		
Dianne Murphy		x		

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Name: D.E Terlizzi

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**CONFLICT OF INTEREST LIST
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Name: Donald Webster

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Name	Co-Author	Collaborator	Advisees/ Advisors	Other – Specify Nature
Billing, Kelly	X	X		
Buritsch, Heather	X	X		
Buttner, Joseph	X			
Carruthers, Timothy	X			
Dennison, William	X			
Ebeling, James	X			
Flimlin, Gef	X	X		
Harrell, Reginal	X	X		
Hengst, Angela	X	X		
King, Jamie	X	X		
Lazur, Andrew	X	X		
Markin, Erin	X	X		
Meritt, Donald	X	X		
Orth, Robert	X			
O'Herron, Michelle	X	X		
Phillips, Steve		X		
Porter, E.	X			
Rippen, Thomas	X			
Roscher, Karl	X	X		
Schuck, Richard	X	X		
Shumway, Sandy	X			
Takacs, Jackie	X	X		
Tarnowski, Mitchell	X			
Terlizzi, Daniel	X			
Timmons, Michael	X			
Wicks, Caroline	X			

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DEBORAH A. BOUCHARD

Business Address: UMAHL, U of ME, 5735 Hitchner Hall, Orono, ME 04469

Business Phone/Fax: (207)581-2767/4430 e-mail: dbouchard@umext.maine.edu

Education: B.S. in Microbiology, 1983, University of Maine, Orono, ME

Certifications: American Fisheries Society, Fish Health Inspector 1991-present
Canadian Local Fish Health Official 1992-present
U.S. Title 50 Certifying Inspector 1993-present

Positions: Laboratory Manager and Research Coordinator, Maine Animal Health Laboratory and Aquaculture Research Institute, University of Maine. April 2006-present.

Marine Resource Scientist I, 2005-March 2006. Researcher and grant writer

President, Micro Technologies, Inc., 1996-June 2005. Owner and president of regulatory aquatic animal health inspection/diagnostic laboratory.

Aquaculture Diagnostics and Bioassay Laboratory Manager, Northeast Laboratory, 1991-March 1996. Manager of regulatory fish health inspection/diagnostic division and bioassay laboratory.

Clinical Microbiologist, Affiliated Laboratories, Inc., 1990-1991.

Research Associate, Aquatic Animal Health Laboratory, University of Maine, Orono, ME 1988-1990.

Professional Affiliation:

American Fisheries Society (AFS), Fish Health Section	1991-present
AFS, Fish Health Section Professional Standards Committee*	1996-1999
AFS, Fish Health Section Technical Standards Committee*	1999-2002
Maine Sea Grant Policy Advisory Committee	2000-2003
State of Maine, Fish Health Technical Committee	1999-present
USDA/APHIS ISAV Technical Committee	2005-present
USDA/APHIS VHSV Expert Panel	April 2007-present

Publications:

Gustafson, L., S. Ellis, **D. Bouchard**, T. Robinson, F. Marengi, C. Giray (2008). "Estimating diagnostic test accuracy for infectious salmon anaemia virus in Maine, USA." Journal of Fish Diseases **31**(2): 117-125

Giray, C., H.M. Opitz, S. MacLean, **D. Bouchard** (2005): Comparison of lethal versus non-lethal sample sources for the detection of infectious salmon anemia virus (ISAV). Dis. Aquat. Org., 66: 181-5

Rolland, J. B., **D. Bouchard**, J. Coll, J. R. Winton (2005): Combined use of the ASK and SHK-1 cell lines to enhance the detection of infectious salmon anemia virus. J. Vet. Diag. Invest., 17(2) 151-7

Bouchard, D., K. Brockway, C. Giray, W. Keleher and P.L. Merrill (2001): First Report of Infectious Salmon Anemia in the United States. Bull. Eur. Fish Pathol. 21(1): 5-8.

Opitz, H.M., **D. Bouchard**, E. Anderson, S. Blake, B. Nicholson and W. Keleher (2000). A comparison of methods for the detection of experimentally induced subclinical infectious salmon anemia in Atlantic salmon. Bull. Eur. Ass. Fish Pathol. 20(1):12-22.

Blake, S., **D. Bouchard**, W. Keleher, H.M. Opitz and B.L. Nicholson (1999) Genomic relationships of the North American isolate of infectious salmon anemia virus (ISAV) to the Norwegian strain of ISAV. Dis. Aquat. Org. 35:139-144.

Bouchard, D., W. Keleher, H.M. Opitz, S. Blake, K.C. Edwards and B.L. Nicholson (1999) Isolation of infectious salmon anemia virus (ISAV) from Atlantic salmon in New Brunswick, Canada. Dis. Aquat. Org. 35:131-137.

Buttner, Joseph K.
Department of Biology
Salem State College
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Office phone: (978) 542-6703
FAX (978) 542-6863
e-mail: jbuttner@salemstate.edu
website: www.salemstate.edu/biology/aquaculture

Education:

Loyola University of Chicago, B.Sc., 1972; M.Sc. 1975
Southern Illinois University- Carbondale, Ph.D. 1981

Positions:

Salem State College: Professor, 2008-present; Assoc. Professor, 2003-2008; Assist. Professor, 1997-2003
SUNY College at Brockport, Assistant Professor 1994-1997, Research Scientist and Extension Specialist
1987-1994, Research Associate, 1984-1987
University of Michigan, Research Associate 1981-83

Selected Publications (author of nearly 90 publications, half peer reviewed and half technical/lay):

Buttner, J., G. Flimlin, and D. Webster. 2008. Marine Aquaculture Species for the Northeast. NRAC Publication No. 1003-2008, University of Maryland, College Park. 6 pp.

Flimlin, G., J. **Buttner**, and D. Webster. 2008. Aquaculture Systems for the Northeast. NRAC Publication No. 104-2008, University of Maryland, College Park. 7 pp.

Fregeau, M., J.K. **Buttner** and S. Weston. 2008. Potential Commercial and Ecological Benefits of Mussel Culture in Coastal Waters. *Journal of Shellfish Biology*, 27(4):949-950.

Buttner, J.K., K.G. Pikora and D. Leavitt. 2007. Augmenting the Lobster Catch: Oyster Aquaculture in Modified Lobster Traps. *World Aquaculture* 38 (3): 26-29.

Buttner, J.K., M. Fregeau, S. Weston, and B. McAneney. 2007. Overwintering and Suspension Growout of Softshell Clams (*Mya arenaria*) in Northeastern Massachusetts, pages 18-19; in *Atelier de Travail sur l'Eleveage de la Mye Commune, Institut des Science de la Mer de Rimouski, 20 au 22 Avril 2005, I. Calderon (ed). Les Publications de la Direction de l'Innovation et des Technologies, Compte Rendu No. 32, Ministere de l'Agriculture, des Pecheries de l'Alimentation du Quebec, Gaspé.*

Buttner, J.K. 2005. Urban Aquaculture: A Necessary Reality, pages 247-257 in *Urban Aquaculture* edited by B. Costa-Pierce, A. Desbonnet, P. Edwards, and D. Baker. CABI Publishing, Oxfordshire, UK. 285 pp.

Recent Grants (PI or Co-PI on ~90 competitive grants and contracts, ~\$1.7 million; excluded are state provided funds to run the Northeastern Massachusetts Aquaculture Center and Cat Cove Marine Laboratory which I co-manage; \$100,000 - \$300,000 annually)

2009 Division of Marine Fisheries, Boston, MA. Stocking and Monitoring of Soft-shell clams *Mya arenaria* for HUB Line Remediation – Year IV (with M. Fregeau and S. Weston, funded, \$24,398)

2008 Northeastern Regional Aquaculture Center, College Park, MD. Northeast Aquaculture Extension Network. (funded, \$298,444, \$10,057 to SSC; Co-PI, T. Getchis, PI)

2007 Massachusetts Department of Agricultural Resources, Boston, MA. Development of the Massachusetts Shellfish Aquaculture Innovation Consortium. (funded, \$200,000, \$52,500 to SSC; Co-PI, W. Walton, PI)

Teaching: (Developed and instructed: *Introduction to Aquaculture, Aquaculture Methods, Advanced Aquaculture, Fish Biology, Explorations in Biology, Estuarine Ecology* and *Topics in Aquaculture*)

JOHN W. EWART

Delaware Aquaculture Resource Center, Sea Grant Marine Advisory Program,
College of Earth, Ocean and Environment, University of Delaware, Lewes, DE 19958
Phone: 302-645-4060; Fax: 302-645-4213; Email: ewart@udel.edu Web site: darc.cms.udel.edu

Education

M.S. Marine Studies, University of Delaware, Lewes, Delaware 1985
B.S. Zoology, University of Rhode Island, Kingston, Rhode Island 1973

Professional Experience

1987-present Aquaculture & Fisheries Specialist, Sea Grant Marine Advisory Program,
University of Delaware
1986-1992 Marine Laboratory Technical Coordinator, University of Delaware
1978-1986 Marine Scientist II, University of Delaware
1975-1978 Marine Research Assistant, University of Maine
1974-1975 Oceanographic Technician, University of Rhode Island
1973-1974 Commercial Fisherman, Galilee, Rhode Island

Recent Publications

Myers, Joseph J., Ramu Govindasamy, John W. Ewart, Bin Liu, Yumin You, Venkata S. Puduri and Linda J. O'Dierno. 2009. Survey of Ethnic Live Seafood Market Operators in the Northeastern USA. *Aquaculture Economics & Management*. Volume 13, Issue 3. pp. 222 – 234.

Myers, Joseph J., Bin Liu, Yumin You, Ramu Govindasamy, Venkat Puduri, John W. Ewart and Linda J. O'Dierno. 2009. Consumer Analysis in Ethnic Live Seafood Markets in the Northeast Region of the United States. *Journal of Food Products Marketing*. Volume 16(2). In Press.

McIntosh, Dennis and John Ewart. 2007. Aquaculture Situation And Outlook Report 2007: Delaware. Northeastern Regional Aquaculture Center. College Park, Maryland. NRAC Publication 102-2007. 6p.

Ulrich, P.N., J.W. Ewart and A.M. Marsh. 2007. Prevalence of *Perkinsus marinus* (Dermo), *Haplosporidium nelsoni* (MSX), and QPX in Bivalves of Delaware's Inland Bays and Quantitative, High-Throughput Diagnosis of Dermo by QPCR. *Journal of Eukaryotic Microbiology*. 54(6), pp. 520–526.

Kendall, Lindsay R., J. W. Ewart, P. Ulrich, and A. Marsh. 2007. Low Incidence and Limited Effect of the Oyster Pathogen Dermo (*Perkinsus marinus*) on an Artificial Reef in Delaware's Inland Bays. *Estuaries and Coasts*. Vol. 30, No. 1, p. 1–9.

Ewart, John W., J. Alderman and EJ Chalabala. 2007. Community-based Oyster Gardening in Sussex County, Delaware for Public Education and Shellfish Restoration. The Proceedings from the 3rd National Conference on Coastal and Estuarine Habitat Restoration. Restore America's Estuaries. Seattle, Washington.

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Education

- MS, Aquatic Biology, West Chester University, West Chester, PA 1998
- BS, Entomology and Applied Ecology and Agricultural Education University of Delaware, Newark, DE 1978

Experience

2001 - Present Associate Director, Pennsylvania Sea Grant, Chester, PA
1999 - 2001 Instructor of Biology, West Chester University, West Chester, PA
1995 - 1998 Aquatic Ecosystems Program (AEP) Education Coordinator, Lehigh University, Bethlehem, PA
1990 - 1994 Education Coordinator, Stroud Water Research Center, Avondale, PA
1985 - 1989 Director of Education, the Brandywine Valley Association, West Chester, PA
1978 - 1981 Biology and Physical Science Teacher, St. Mark's High School, Wilmington, DE

Educational Materials and Publications

Faulds, 2009. *Fish Consumption Advice....What Should a Person Believe?* Delaware Estuary News, Fall, 2009.
Faulds & Currey. *The Delaware River Airshed*. Delaware Estuary News, Winter, 2004.
Faulds & Wakefield, 2003. *Aquatic Supertramps of the Delaware Valley*. A series of 11 Aquatic Invasive Species Fact sheets published by Pennsylvania Sea Grant.
Faulds & Wakefield, 2003. *Supertramp Roulette*. An educational invasive species board game.
Faulds & Wakefield, 2003. *Phragmites; a Tale of Two Strains*. Delaware Estuary News, Spring 2003.
Faulds, 2002. *Meet the Flathead Catfish: Recently Introduced to the Delaware River Watershed*. Delaware Estuary News, Spring issue.
Faulds, Fall 1999. *Water Beetlemania: What can water beetles tell us about our wetlands?* Outdoor Delaware. Delaware Department of Natural Resources and Environmental Control. Dover DE. pp 22-24.
Faulds, Travers, Murray, Sexton, Palmer and Neville, 1994. *Leaf Pack Experiment Teacher Packet, first edition*. Stroud Water Research Center, Avondale, PA.

Web Publishing

Faulds, 2004.
Flathead Catfish in Eastern Pennsylvania. <http://seagrant.psu.edu/research/flathead.htm>
Faulds & Kreamer, 2001.
Water Beetlemania. <http://darwin.wcupa.edu/beetlemanweb>
Faulds & Fairchild, 1998.
Wetland Invertebrate Survey of Southeastern Pennsylvania
www.wcupa.edu/ACADEMICS/sch_cas.bio/AWEBSITE
Faulds, Morris, Hargreaves & Moeller, 1999.
The Lehigh University Aquatic Ecosystems Program for Research and Education www.lehigh.edu/~inaep

Scientific Publications

Knuth, BA, C. McOliver, EK Silbergeld, , NA Connelly, and A Faulds. 2008. *Contaminant and Pathogen Considerations in Urban Fisheries: Balancing the Fishing Experience with the Need to Protect Human Health*. American Fisheries Society Symposium [Am. Fish. Soc. Symp.]. no. 67, pp. 143-164.
GW Fairchild, J. Cruz, A Faulds, A. Short, and J. Matta. 2003. Microhabitat and landscape influences on aquatic beetle assemblages in a cluster of temporary and permanent ponds. *Journal of the North American Benthological Society*: Vol. 22, No. 2, pp. 224-240.
Fairchild, Faulds, and Matta. 2000. *Beetle Assemblages in Ponds: Effects of Habitat and Site Age*. *Freshwater Biology* 44:523-534.
Fairchild, Faulds, and Saunders. 1999. *Constructed Marshes in Southeast Pennsylvania: Invertebrate Foodweb Structure*. Pages 423-446 in: *Invertebrates in Freshwater Wetlands of North America: Ecology and Management*, edited by Batzer, Rader and Wissinger. John Wiley and Sons, Inc.

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EDUCATION

BS, Biology, 1974, St. Peter's College, Jersey City, NJ 07304

MS, Marine and Environmental Science, 1978, C.W. Post Center of LIU, Brookdale, NY

PROFESSIONAL EXPERIENCE

--March 2000 – Present: Marine Extension Agent, Associate Professor with Tenure, Rutgers Cooperative Extension, Monmouth, Ocean and Atlantic Counties, New Jersey

--May 1997 - Present: County Extension Department Head, Rutgers Cooperative Extension of Ocean County, Toms River, NJ.

--November 1978 – March 2000: Marine Extension Agent, New Jersey Sea Grant Marine Advisory Service, Toms River, NJ.

--December 1977 - May 1978: Biological Aide, U.S. Department of Commerce, National Marine Fisheries Service, Sandy Hook Laboratory, Highlands, NJ.

--October 1974 - July 1976: Quality Assurance Inspector of Meat Products, Swift & Company, Kearny, NJ.

SCIENTIFIC AFFILIATIONS

East Coast Shellfish Growers Association

National Association of County Agricultural Agents

National Shellfisheries Association

New Jersey Aquaculture Association

New Jersey Shellfisheries Association

World Aquaculture Society, US Aquaculture Society

SELECTED PUBLICATIONS

Refereed Journal Articles

- --Krauter, J.N., G. E. Flimlin, M.J. Kennish, R. Macaluso, J. Viggiano, 2009, "Sustainability of northern quahogs (=hard clams) *Mercenaria mercenaria*, Linnaeus in Raritan Bay, New Jersey: Assesment of size-specific growth and mortality." *Journal of Shellfish Research*, Volume 28 (2), April 2009.
- --Krauter, J.N., M. Kennish, J. Dobarro, S.R. Fegley, G.E.Flimlin Jr., 2003, "Rehabilitation of Hard Clam (*Mercenaria mercenaria*) Habitats by Shelling: 11 Years in Barnegat Bay, New Jersey", *Journal of Shellfish Research*, Volume 22(1), June, 2003.
- --J.N Krauter, S. Fegley, G.E. Flimlin Jr., G. Mathis, 1998, The Use of Mesh Bags for Rearing Hard Clam, *Mercenaria mercenaria*, Seed. *Journal of Shellfish Research*, Vol. 17, No.1, 205-209.

Fact Sheets

- --Gef Flimlin, Robert Pomeroy, "Growing ornamental aquatic plants as a business in the Northeastern United States," Northeast Regional Aquaculture Center, May 2008. NRAC Pub-301-2008.
- --Gef Flimlin, Don Webster, Joseph Buttner, "Aquaculture Systems for the Northeast" Northeast Regional Aquaculture Center, NRAC Pub-104-2008.
- --Don Webster, Joe Buttner, Gef Flimlin, "Planning for Success in Your Aquaculture Business", Northeast Regional Aquaculture Center, NRAC Pub-101-2008.
- --Joe Buttner, Gef Flimlin, Don Webster, "Freshwater Aquaculture Species for the Northeast", Northeast Regional Aquaculture Center, NRAC Pub-102-2008.
- --Joe Buttner, Gef Flimlin, Don Webster, "Marine Aquaculture Species for the Northeast", Northeast Regional Aquaculture Center, NRAC Pub-103-2008.

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EDUCATION

M.S., Fisheries, Animal and Veterinary Science, University of Rhode Island, 2000
B.S., Marine Biology, Roger Williams University, 1997

PROFESSIONAL EXPERIENCE

Associate Extension Educator, 2003 - present
Connecticut Sea Grant, Department of Extension, University of Connecticut
Instructor, 2004 - 2006
Department of Natural Resources Management & Engineering, University of Connecticut
Assistant Extension Educator, 2000 - 2003
Connecticut Sea Grant and Cooperative Extension, University of Connecticut
University Aquaculture Specialist, January 2000 – June 2000
Connecticut Sea Grant, University of Connecticut
Research and Teaching Assistant, 1997-1999
Rhode Island Sea Grant, University of Rhode Island

COURSES TAUGHT

Introduction to Aquaculture, NRME 208, University of Connecticut
Training in Extension Methods for Coastal Resource Management, NRME 299, University of Connecticut

RECENT PUBLICATIONS

Vaudrey, J.M.P., Getchis, T.S., Shaw, K., Markow, J., Britton, R., Kremer, J. (2009) Effects of oyster depuration gear on eelgrass (*Zostera marina*) in a low density aquaculture site in Long Island Sound. *Journal of Shellfish Research*. 28(2):243-250.

Getchis, T.S., Pomeroy, R. (2009) Aquaculture Situation and Outlook Report: Connecticut. USDA NIFA Northeastern Regional Aquaculture Center. NRAC-09-113.

Getchis, T.S., Rose, C.M., Carey, D., Bellantuono, K., Kelly, S. (2008) A Guide to Marine Aquaculture Permitting in Connecticut. Connecticut Sea Grant. CTSG-08-02. 140pp.

Carey, D., Kelly, S., Getchis, T.S. (2008) Guidelines for Utilizing Aquatic Organisms for Scientific/Educational Purposes in Connecticut. Connecticut Sea Grant College Program. Aquaculture Fact Sheet. CTSG-08-10. 2pp.

Getchis, T.S., Monahan, E.C. (2008). Sea Grant's role: sharing with the community the goal of fostering ecologically-sound, and economically-viable, aquaculture. *Int. J. Environment and Pollution*. 33(4):501-506.

Getchis, T.S., Magda, A. (2007). Center for Survey Research & Analysis (CSRA). Aquaculture Producer Informational Needs Survey. Connecticut Sea Grant. 30pp.

Getchis, T.S., Burr, B., Edwards, R., Jette, M., Carey, D. (2007) Increasing shellfish aquaculture producer eligibility for USDA farm assistance Programs. Connecticut Sea Grant College Program. 12pp.

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Rhodes, E., Garrison, R., Getchis, T.S., Macfarlane, S. & Morse, D. (2005). Expanding shellfish culture in the NRAC region - constraints to existing industry expansion and an analysis of the economic feasibility of new, small-scale oyster culture businesses. Northeastern Regional Aquaculture Center, North Dartmouth, MA.

Sunila, I., Williams, L., Russo, S. and T.S. Getchis. (2004). Reproduction and Pathology of Blue Mussels, *Mytilus edulis* (L.) in an Experimental Longline in Long Island Sound, Connecticut. *Journal of Shellfish Research*. 23(3):731-740.

Getchis, T.S. and R.J. Johnston. (2004). Connecticut Commercial Aquaculture. Pp In: Connecticut Agriculture and Resources: 21st Century Issues and Challenges. College of Agriculture and Natural Resources. University of Connecticut, Storrs, CT.

Duff, J., Getchis, T.S. and P. Hoagland. (2003). A Review of Legal and Policy Constraints to Aquaculture in the US Northeast. NRAC Publication No. 03-005/NRAC Project No. WP03-9.

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Education

June 1981: M.S., Food Science and Human Nutrition, University of Delaware, Newark, DE.
June 1977: B.S., Food Science, Cook College, Rutgers University, New Brunswick, NJ.

Selected Publications

Hicks, D. T. 1992, 1996, 2008. A Consumer Guide to Safe Seafood Handling. MAS Bulletin. Newark, DE: University of Delaware Sea Grant College Program.

Hicks, D. T. 1990. Consumers Know the Facts about Eating Raw Shellfish. Newark, DE: University of Delaware Sea Grant College Program.

Hicks, D. T., and D. Kramer. 1999. "Seafood Safety: What Consumers Need to Know" University of Delaware Sea Grant College Program and the National Seafood HACCP Alliance.

Hicks, D. T., S. Snider, C. Wabeck & T. Rippen. 2001. "Safe Food Depends on You" Video and Training Guide. University of Delaware, Cooperative Extension, Newark, DE.

Hicks, D.T., and W. Daniels. 2002. "Sanitation Control Procedures" Video, Delaware State University Department of Agriculture & Natural Resources, Dover, DE.

Selected Publications from refereed journals.

Berlin, D. L., D. S. Herson, D. T. Hicks, and D. G. Hoover. 1999. "Response of Pathogenic *Vibrio* Species to High Hydrostatic Pressure" *Applied and Environmental Microbiology*, Vol. 65, No. 6, p. 2776-2780.

Gall, K., V.N. Scott, R. Collette, M. Jahncke, D. Hicks, and M. Wiedmann. 2004. Implementing targeted good manufacturing practices and sanitation procedures to minimize *Listeria* contamination of smoked seafood products. *Food Protect. Trends* 24:302-315.

Scott, V.N., M. Wiedmann, D. Hicks, R. Collette, M.L. Jahncke, and K. Gall. 2005. Guidelines of *Listeria* testing of environmental, raw product and finished product samples in smoked seafood processing facilities. *Food Protect. Trends* 25:23-34.

D. Guan, K. Kniel, R.L. Calci, D.T. Hicks, L.F. Pivarnik and D.G. Hoover. Response of four types of coliphages to high hydrostatic pressure. *Food Microbiology* 23(6): September 2006, pp. 546-551.

Hicks, D.T., L.F. Pivarnik, R. McDermott, N. Richard, D.G. Hoover, and K.E. Kniel 2009 Consumer Awareness and Willingness to Pay for High-Pressure Processing of Ready-to-Eat Food. *Journal of Food Science Education* Vol. 8, pp. 32-38.

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ACADEMIC TRAINING

Ph.D. 1981. Entomology. Oregon State University, Corvallis, Oregon.
M.S. 1975. Entomology. University of Idaho, Moscow, Idaho.
B.S. 1973. Biological Sciences. University of Alaska, Fairbanks, Alaska.

EXPERIENCE

Director, Western Massachusetts Center for Sustainable Aquaculture (2004-)
Extension Educator (1984 -) University of Massachusetts Extension
Adjunct Assistant Professor (1996 -), Department of Plant, Soil and Insect Sciences, University of Massachusetts.
Editor, Pacific Northwest Insect Management Handbook 2006 - 2009
Board of Editors, Journal of Sustainable Agriculture (1996-)
State Pest Survey Coordinator (1990 - 2001) Department of Entomology, University of Massachusetts.
Postdoctoral Fellow: Department of Zoology and Entomology, Colorado State University. 7/81 – 3/83.
Fisheries Technician, Alaska Department of Fish and Game, 1973 and 1975

SELECTED PUBLICATIONS

Yoon, K, D.H. Kwon, J.P. Strycharz, C.S. Hollingsworth, S.H. Lee and J.M. Clark. 2008. Biochemical and molecular analysis of deltamethrin resistance in the common bed bug (Hemiptera: Cimicidae). *J. Medical Entomology*.45(6): 9992-1101.

Hollingsworth, C.S., R. Baldwin, K. Wilda, R. Ellis and S. Soares. 2006. Best Management Practices for Finfish Aquaculture in Massachusetts. UMass Ext. Publ. AG-BPFA. 54 pp.

Cohen, N., C.S. Hollingsworth, R.B.Olson, M.J. Laus and W.M.Coli. 2005. Farm Food Safety Practices: A Survey of New England Growers. *Food Protection Trends*. 25(5):363-370.

Hollingsworth, C.S. (ed). 2003. Integrated pest management: a manual for IPM practitioners. Univ. Mass. Ext. Bull. IP-SIPMC.

Hollingsworth, C.S., W.M. Coli, K.D. Murray and D.N. Ferro (eds). 2002. Integrated pest management for northeast schools. NRAES-152.

Hollingsworth, C., W. Coli, N. Cohen, R. Brennan-Olson and M.J. Laus. 2001. Good agricultural practices in New England ~ a survey of practices influencing food safety. UMass Ext. Nutrition Fact Sheet.

Hollingsworth, C.S., R. Bernatzky, R. Hazzard, D. Ferro. 2000. Issues in Genetically Modified Vegetable Crops. UMass Extension Vegetable Fact Sheet. Veg4-00

Hollingsworth, C.S., and W.M. Coli. 2000. Massachusetts integrated pest management guidelines: crop-specific definitions. *J. Extension* 38:4.

Hollingsworth, C.S. 2001. Massachusetts school integrated pest management. UMass Ext. Publ. Ag-1435

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Formal Education:

B.S.	University of New Hampshire	1993
M.S.	University of Rhode Island	1996
Ph.D.	University of Rhode Island	2005

Awards:

UNH Outreach Scholar	2007
W. Durfee Shellfish Merit Scholarship, University of RI	2005
Rhode Island Sea Grant Industry Fellow	2001

Pertinent Experience:

12/04-present Assistant Extension Professor of Zoology
NH Sea Grant/UNH Coop. Ext. Extension Specialist
Commercial Fisheries Technology Transfer

6/04-12/04 Adjunct Faculty in Life Sciences, NHCTC Manchester/Stratham

3/96-10/04 Director of Quality Assurance, Spinney Creek Shellfish, Inc.

Professional Organizations:

American Fisheries Society	2004 to present
National Sea Grant Fisheries Theme Team	2006 to present
Institutional Animal Care and Use Committee	2007 to 2009

Selected Publications:

La Valley, K. J. 2006. What is the optimum mesh size to harvest groundfish on Georges Bank? Drawing conclusions from cooperative research. NH Sea Grant publication UNHMP-TR-SG-06-22.

La Valley, K. J. and D. Morse. 2006. Onboard handling techniques key to higher quality and price. NH Sea Grant publication UNHMP-IS-SG-06-31.

La Valley, K. J. 2001. Effects of Nursery Culture Technique on the Morphology and Borrowing Capability of the Softshell Clam, *Mya arenaria*. Journal of Shellfish Research, Vol. 20, No. 1 509-530.

DeAlteris, J. T., and K. J. La Valley. 1999. Physiological Response of Scup, *Stenotomus chrysops*, to a Simulated Trawl Capture and Escape Event. Marine Technology Society.

La Valley, K. J., T.L. Howell, R.Y. Morse, B.F. Beal, and B. Dubois. 1999. Experimental testing of field techniques for farming the soft-shell clam (*Mya arenaria*). Journal of Shellfish Research, Vol. 18, No.1, 259-280.

Curriculum Vitae (abbreviated – one page)

NAME: Andrew M. Lazur

Associate Professor, Extension Aquaculture Specialist

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EDUCATION:

College or University	Major	Degree
Auburn University	Fisheries and Aquaculture	Ph. D.
Auburn University	Aquaculture	M.Aq.
Univ. of South Carolina	Biology	B.S.

PROFESSIONAL EXPERIENCE:

Dates	Organization	Position
7/2001-present	Univ. of Maryland, Center for Environmental Sciences, Horn Point Lab	Extension Specialist / Associate Prof.
1990-7/2001	University of Florida, Fish. and Aquatic Sci.	Extension Specialist / Associate Prof.
1985 - 1988	Louisiana State University	Research Coord.

SELECTED RECENT GRANTS (of 26 since 2002):

Feed training of wild-caught Atlantic sturgeon and pre-release weaning of juveniles.

Lead P.I. Maryland Department of Natural Resources. \$37,171. 2008.

Evaluating restoration and mitigation aquatic plant species and markets to advance the commercialization of the industry. Lead P.I. USDA Northeast Regional Aquaculture Center. \$449,903. 2007-2009.

Evaluation of wild-caught and pre-release training of Atlantic sturgeon. Lead P.I. Maryland Department of Natural Resources. \$36,233. 2007.

Nutrition studies in hatchery technology of clownfish and angelfish in closed marine systems. Co-P.I. USDA Northeast Regional Aquaculture Center (NRAC). \$80,031. 2004-2007.

SELECTED PUBLICATIONS (of 59 since 2000):

Lazur, A. M. and E. Markin. 2009. Preliminary studies in feed training wild-caught Atlantic sturgeon onto commercial diet. *Journal of Applied Ichthyology*. Accepted.

Markin, E., A. M. Lazur, and A. Hengst. 2009. Assessment of pre-release weaning on growth of Atlantic sturgeon *Acipenser oxyrinchus*. *Journal of North American Aquaculture*. Accepted.

Kalim, H., F. Wheaton, A. Lazur, and S. VanKeuren. 2009. Effects of Management Practices on Water Quality in Recirculating Tilapia Systems: A Case Study. *Journal of International Aquaculture* Accepted.

Lazur, A. M. and R. Hanessian. 2008. Re-Homing Exotic Species - a Pilot Program to Prevent Release of Exotic Aquatic Pet Species. *Journal of Extension* 06-195IAW.

Lazur, A. M., D.B. Pouder, and J.E. Hill. 2007. Preliminary Evaluation of Sturgeon Production and Sustainability of a Zero-Discharge Pond Water Recirculating Tank System. *North American Journal of Aquaculture* 70:281-285.

Miller, J., K.M. Buzby, K.J. Semmens, A. Lazur, D. McIntosh and T.P. West. 2007. Use of Aquaponics as a Secondary Crop and Effluent Treatment in Ponds, Raceways and Recirculating Tank Systems. *Hortscience* 42(4):942-943.

Lazur, A.M., J. Goldman, K. Semmens, and M.B. Timmons. 2003. Land-based aquaculture systems, engineering and technology: opportunities and needs. Northeast Regional Aquaculture Center Publication No. 03-002.

Mims, S.D., Lazur, A.M., Chapman, F., Shelton, W.L., and B. Gomelsky. 2002. Production of sturgeon. Southern Regional Aquaculture Center Publication 7200.

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Education:

1972 **BS** (Biology) University of Maine, Orono, ME
1977 **MS** (Animal Sciences) University of Maine, Orono, ME
 Thesis: Dietary intake and nutritional parameters in the lobster *Homarus americanus*.
1987 **Ph.D.** (Nutritional Sciences) University of Maine, Orono, ME
 Dissertation: Bioenergetic evaluation of diets for the American lobster.

Employment:

Aug. 2009 Roger Williams University
 to Bristol, RI
present Academic Dean: Robert Cole
Associate Professor (with Tenure) - Regional Aquaculture Specialist

Feb. 2003 Roger Williams University
 to Bristol, RI
Aug. 2009 Academic Dean: Robert Cole

Assistant Professor - Regional Aquaculture Specialist: responsibilities divided into 50% teaching and 50% research/extension. Primary responsibility to establish direction and oversee shellfish aquaculture outreach services to aquatic farmers and general public within Rhode Island and southeastern Massachusetts region.

Publications: author or co-author of over 25 refereed journal articles and 13 technical reports and bulletins, primarily associated with shellfish biology, including:

- Weinberg, J.R., D.F. Leavitt, B.A. Lancaster, and J. McDowell Capuzzo. 1997. Experimental field studies with *Mya arenaria* (Bivalvia) on the induction and effect of hematopoietic neoplasia. J. Invert. Path. 69:183-194.
- Smolowitz, R., D. Leavitt, and F. Perkins. 1998. Observations of a protistan disease similar to QPX in *Mercenaria mercenaria* (hard clams) from the coast of Massachusetts. J. Invert. Path. 71:9-25.
- Leavitt, D., J. Buttner and J. Kraeuter. 2003. A review of open-water production systems, engineering and technology. Aquaculture White Paper No. 1, NRAC Publication No. 03-001. NRAC, University of Massachusetts Dartmouth, North Dartmouth, MA. 53 pgs.
- Leavitt, D.F. 2004. Best Management Practices for the shellfish aquaculture industry in southeastern Massachusetts. Publication of the SouthEastern Massachusetts Aquaculture Center. 100 pgs. Available online: http://www.mass.gov/agr/aquaculture/docs/Shellfish_BMPs_v09-04a.pdf
- Gast, R.J., E. Cushman, D.M. Moran, K.R. Uhlinger, D.F. Leavitt, and R. Smolowitz. 2006. DGGE-based detection method for Quahog Parasite Unknown (QPX). Dis. Aquat. Org. 70:115-122.
- Gast R.J., D.M. Moran, J. DeFaveri, D. Leavitt, M. Lyons, and R. Smolowitz. 2008. Environmental distribution and persistence of Quahog Parasite Unknown (QPX). Dis. Aquat. Org. 81:219-229

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Education

B.S. Marine Science. 1994. Richard Stockton College of New Jersey, Pomona, NJ.

M.S. Mariculture. 1999. Texas A&M University - Corpus Christi, Corpus Christi, TX..

Ph.D. Environmental Science. 2002. University of Arizona, Tucson, AZ.

Experience

7/09 - Present	Associate Research Professor and Extension Specialist - Aquaculture
1/04 - 06/09	Assistant Research Professor and Extension Specialist - Aquaculture
6/02 - 12/03	Research Associate - Post Doctoral, Environmental Research Lab
8/99 - 6/02	Graduate Research Associate, University of Arizona
5/00 - 5/01	NSF Graduate Teaching Fellowship in K-12 Education

Research Interests

Freshwater and marine aquaculture; water quality; integrated aquaculture/agriculture systems; aquaculture effluents; recirculation technology.

Professional Activities

United State Aquaculture Association (USAS) since 1997 and USAS Board of Directors, 2006

National Aquaculture Association since 2001

World Aquaculture Society (WAS) since 1997

Selected Publications, Peer Reviewed

Neves, K. J., and D. McIntosh. (in review). Evaluation of Strategies for Weaning Larval Weakfish (*Cynoscion regalis*) from Live Feeds onto a Manufactured Diet. Aquaculture Nutrition.

Walker, D. B., N. V. Paretti, G. Cordy, T. S. Gross, S. D. Zaugg, E. T. Furlong, Dana W. Kolpin, and Dennis McIntosh. (in press). Endocrine Disruption in a Threatened and Endangered Fish Species Exposed to Treated Municipal Wastewater. Aquatic Toxicol.

McIntosh, D. 2008. Aquaculture Risk Management. CSREES Northeast Regional Aquaculture Center. NRAC-107-2008. 4 pages.

Jacobs, J. M., M. Rhodes, B. Martin, D. McIntosh, W. F. Van Heukelem and R. M. Harrell. 2008. Tissue specific sampling for the estimation of proximate compositional components in Striped Bass (*Morone saxatilis*). Transactions of the American Fisheries Society 137:386-392.

McIntosh, D. and K. Fitzsimmons. 2003. Characterization of effluent from an inland, low-salinity shrimp farm: What contribution could this water make if used for irrigation? Aquacultural Engineering 27: 147-156.

Samocha, T. M., L. Hamper, C. R. Emberson, A. D. Davis, D. McIntosh, A. L. Lawrence and P. M. Van Wyk. 2002. Review of some recent developments in sustainable shrimp farming practices in Texas, Arizona and Florida. Journal of Applied Aquaculture 12: 1-42.

Selected Industry Publications

McIntosh, D. and J. Ewart. 2007. Aquaculture Situation and Outlook Report 2007: Delaware. CSREES Northeastern Regional Aquaculture Center. NRAC-102-2007. 6 pages.

McIntosh, D. and C. Starke. 2006. The Delaware State University Aquaculture Research and Demonstration Facility. World Aquaculture 37(4): 22-25 and 72.

McIntosh, D. K. Fitzsimmons, C. Collins and C. Stephens. 2006. Phytoplankton Community Composition and Chlorophyll-a Levels of Inland, Low-salinity Shrimp Ponds. World Aquaculture 37(1): 58-61 and 69.

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EDUCATION:

University of New Hampshire, B.S., Wildlife Management	1986
University of Rhode Island, M.S., Fisheries Technology	1994

EMPLOYMENT:

Maine Sea Grant / UM Cooperative Extension, Extension Associate 7/98 to Present
Responsibilities include working collaboratively with university researchers, resource managers, industry partners and others, on applied research projects in commercial fisheries and shellfish aquaculture, develop applied educational programs such as workshops and seminars, and providing technical extension and outreach to industry and other marine users.

SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS:

- Maine Aquaculture Association, American Fisheries Society, National Shellfisheries Association, World Aquaculture Society

SELECTED PUBLICATIONS:

Morse, D.L. 2005. What will the coast of Maine be, in the Future? Working Waterfront/Inter-Island News, November 2005, p 9.

Morse, D.L. 2004. Sea Trials to Assess Knotless Codend Mesh Selectivity. Maine Sea Grant, Technical Report MSG-TR-04-01.

Howell, L.A. and D. Morse, Eds. 2000. Shellfish Aquaculture in Maine. Priority Setting Meeting Proceedings. Maine Sea Grant Pub. MSG-E-00-4, NOAA Grant #NA96FG0102.

Beal, B.F., M. Hastings, D. Morse, L. Taylor, T. Pottle, S. Rappaport, K. Porter, S. Inches, W. Hopkins, J. Trenholm. 1999. The Culture of Japanese Scallops (*Patinopecten yessoensis*), Report of the Maine Delegation of Aomori Prefecture, Japan, May 14-21, 1999. Maine Aquaculture Innovation Center, Orono, Maine, USA.

Morse, D. 1998. The Effects of Off-Bottom Ground Gear on Flatfish Catches in the Southern New England Whiting Fishery. NOAA Technical Report, in fulfillment of NOAA Award# NA76FD0141.

DeAlteris, J., and D.L. Morse. 1997. Fishing Gear Management: History, Ecological Impacts and Research. IN: Northwest Atlantic Groundfish: Management Alternatives for Sustainable Fisheries. American Fisheries Society, Robert Kendall, Ed.

DeAlteris, J., H. Milliken and D. Morse. 1996. Bycatch Reduction in the Northwest Atlantic Small Mesh Bottom Trawl Fishery for Silver Hake (*Merluccius bilinearis*). Proceeding of the Second International Fisheries Congress, Brisbane, Australia.

Morse, D.L. 1995. The Northeast Fisheries Assistance Program and Fishing Industry Grants. Proceedings of the Symposium on the Potential for Development of Aquaculture in Massachusetts. NOAA Tech. Memo. NMFS-NE-109.

Diane C. Murphy<http://www.whoi.edu/seagrant/><http://www.capecodextension.org/>

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EDUCATION

Master's Program in Biology/Environmental Science Western Connecticut State University Danbury, Connecticut	2010
B.A., Pace University Pleasantville, New York	1977

EXPERIENCE

Fisheries & Aquaculture Specialist , Cape Cod Cooperative Extension & Woods Hole Oceanographic Institution Sea Grant, MA	Jan. 2009 – present
Extension Program Leader , Woods Hole Oceanographic Institution Sea Grant, MA	Jan. 2009 – present
Marine Program Specialist , Cape Cod Cooperative Extension	1999 – 2008
Program and Field Coordinator , SEMAC	1999 – present
Field Researcher , Wildlife Conservation Society, NY	1995 – 1999
Archivist , American Museum of Natural History, NY	1996 – 1999
Science Consultant/Educator , New York Aquarium, NY	1997 – 1999
Executive Director , Oblong Land Conservancy, NY	1996 – 1997
Assistant to Construction Company , Pawling, NY	1985 – 1995
Private Duty Nurse's Aide , New York	1981 – 1985
Assistant to School Psychologist , Fox Lane Middle School	1979 – 1981

PEER-REVIEWED PUBLICATIONS

Walton, W.C., D. Murphy & R. Smolowitz. *In Prep.* Field test of culture methods to reduce losses of farmed northern quahogs to QPX (Quahog Parasite Unknown). *Journal of Shellfish Research* (intended).

Walton, W.C. & D. Murphy. *In Prep.* A low-cost tool to quantitatively assess shellfish habitat. *Conservation Biology* (intended).

Van Holt, T.D., D. Murphy & L. Chapman. 2006. Local and landscape predictors of fish assemblage characteristics in the Great Swamp, New York. *Northeastern Naturalist* 13:353-374.

Daniels, R., D. Murphy & M. Klemens. 2001. *Orconectes neglectes* is established in the northeast. *Northeastern Naturalist* 8(1):93-100.

Robert S. Pomeroy

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Groton, CT 06340

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EDUCATION

Ph.D., 1989. Cornell University (Resource Economics).
MCRP, 1978. Clemson University, (Rural and natural resource planning).
B.A., 1976. Johnson State College, Vermont. Environmental Studies/Biology.

EXPERIENCE

2005 - Senior Research Fellow, WorldFish Center, Penang, Malaysia
2002 - Associate Professor and Sea Grant Fisheries Extension Specialist, Department of Agricultural and Resource Economics/Connecticut Sea Grant Program
1999-2002 Senior Associate, Coastal and Marine Projects, Biological Resources Program, World Resources Institute, Washington, D.C.
1991-1999 Senior Scientist, Fisheries Economics, International Center for Living Aquatic Resource Management, Manila, Philippines
1984-1991 Associate Professor/Extension Agricultural Economist (Natural Resource/Marine Economist), Clemson University, Department of Agricultural and Applied Economics.

GRANTS AND CONTRACTS

Policy Brief on Live Food Fish Capture and Trade: Focus on Calamianes Islands and Palawan Province, Philippines, with Implications for National Policy, Fisheries Improved for Sustainable Harvest Project (FISH), U.S. Agency for International Development/Tetra Tech; Putting Coral Reef Conservation into Practice: Lessons from the Preparation of the Largest Coral Reef Conservation Program in the Developing World, World Bank; Fish Wars: Conflict and Collaboration in Fisheries Management in Southeast Asia, The John D. and Catherine T. MacArthur Foundation.

RECENT PUBLICATIONS

Christie, P., K. Lowry, A.T. White, E.G. Oracion, L. Sievanen, R.S. Pomeroy, R.B. Pollnac, J. M. Patlis, and R.V. Eisma. 2005. Key findings from a multidisciplinary examination of integrated coastal management process sustainability. Ocean and Coastal Management
Mahon, R., P. McConney, J. Parks and R. Pomeroy. 2005. Reconciling the needs of fisheries and conservation on coral reefs. World Fisheries Congress.
Johnston, R.J., C. A. Roheim, D. P. Joglekar and R.S. Pomeroy. 2005. Estimating Preferences for Non-Market Attributes of Aquaculture and Sustainable Seafood Production: Methods and Empirical Applications. International Journal of Environment and Pollution.
Pomeroy, R.S., L.M. Watson, J.E. Parks and G. A. Cid. 2005. How is your MPA Doing? A Methodology for Evaluating the Management Effectiveness of Marine Protected Areas. Ocean and Coastal Management
Pomeroy, R.S., K. Sugama, B. Slamet and Tridjoko. 2005. The Financial Feasibility of Small-Scale Grouper (*Cromileptes altivelis*) Aquaculture in Indonesia. Asian Fisheries Science
Pomeroy, R.S., J. E. Parks and C. M. Balboa. 2005. Farming the Reef: Is Aquaculture a Solution for Reducing Fishing Pressure on Coral Reefs? Marine Policy

Joshua Reitsma

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Education

B.S. Environmental Science, 2002
Unity College, Unity, ME
M.S. Fisheries, Animal and Veterinary Science, 2008
University of Rhode Island, Kingston, RI

Professional Experience

Marine Program Specialist, June 2009 – Present
Cape Cod Cooperative Extension, Barnstable, MA
Fish Hatchery Manager, June 2007 – May 2009
Mid-Atlantic Aquatic Technology, Quinby, VA
Research Assistant, January 2004 – May 2007
University of Rhode Island, Department of Fisheries Animal and Veterinary
Science, Kingston, RI
Fisheries Interviewer, August – October 2004
Quantech, CT/RI Field Area, Narragansett, RI
Biological Science Technician, May – December 2003
United States Fish and Wildlife Service, CA-NV Fish Health Center, Anderson,
CA
Resource Assistant, November 2002 – May 2003
Connecticut Department of Environmental Protection, Whittemore Salmon
Station, Riverton, CT
Fisheries Intern, June - Sept. 2001
Alaska Department of Fish & Game, Haines, AK

Recent Publications

Reitsma, J., Bradley, T.M. (In Review). Regulation of myostatin in Atlantic salmon during parr smolt transformation and transfer to seawater. Submitted to Aquaculture.

Schwarz, M.H., Reitsma, J., Delbos, B.C., Morton, C. 2009. Spot, *Leiostomus xanthurus*, production on Eastern Shore Virginia for Mid-Atlantic baitfish markets. Proceedings of the Aquaculture America Conference, Feb. 15-18, Seattle WA.

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PROFESSIONAL INFORMATION:

Education:

BS 1977, Biology, University of San Francisco
MS 1981, Marine Biology, University of California, Irvine
Ph.D. 1987, Comparative Physiology, University of California, Irvine

Employment:

2000-present University of Rhode Island Professor
2000-2004 University of Rhode Island Chairman, Dept. of Fish., Animal & Vet. Science
1993-2000 University of Rhode Island Associate Professor with Tenure
1996-1997 Don Mariano Marcos Memorial State University, Philippines. Visiting Fulbright Professor
1987-1993 University of Rhode Island Assistant Professor
1985-1987 University of California, Irvine Research Assistant
1981-1985 U.S. Peace Corps, Philippines Mariculture Extensionist
1977-1981 University of California, Irvine Teaching Assistant
May - Sept. 1977 Interstate Electronics Corp., Oceanic Engineering Division Marine Biologist

SELECTED PUBLICATIONS

- Rice, M.A. and G.C. Stephens. (1988). Influx, net flux and transepithelial flux of amino acids in the hardshell clam, *Mercenaria mercenaria*: influence of salinity. *Comparative Biochemistry and Physiology* 89A:531-536.
- Rice, M.A., C. Hickox and I. Zehra. (1989). Effects of intensive fishing effort on the population structure of quahogs, *Mercenaria mercenaria* (L.) in Narragansett Bay. *Journal of Shellfish Research* 8:445-454.
- Rice, M.A. (1992). The Northern Quahog: Biology of *Mercenaria mercenaria*. Rhode Island Sea Grant Publication No. RIU-B-92-001, University of Rhode Island, Narragansett. 60 pp. ISBN-0-938412-33-7.
- Rice, M.A. and J.A. Pechenik. (1992). A review of the factors influencing the growth of the northern quahog *Mercenaria mercenaria* (Linnaeus, 1758). *Journal of Shellfish Research* 11:279-287.
- Rheault, R.B. and M.A. Rice. (1996). Food-limited growth and condition index in the oyster *Crassostrea virginica* (Gmelin 1791) and the bay scallop *Argopecten irradians irradians* (Lamarck 1819). *Journal of Shellfish Research* 15:271-283.
- Rice, M.A. (2003). Chapter 3, Food: Aquaculture. pp. 372-417. In: B. Hazeltine and C. Bull (eds.), *Sourcebook of Appropriate Technology*. Academic Press/Elsevier, Amsterdam. 874pp.
- Rice, M.A. (2007). Bivalvia. pp. 141-144. In: Vol. 3, *McGraw-Hill Encyclopedia of Science and Technology*, 10th Edition. McGraw-Hill, New York.
- Marroquin-Mora, D.C. and M.A. Rice. (2008). Gonadal cycle of northern quahogs, *Mercenaria mercenaria* (Linne, 1758), from fished and non-fished subpopulations in Narragansett Bay. *Journal of Shellfish Research* 27:643-652.

RIPPEN, THOMAS E.
Seafood Technology Specialist
Sea Grant Extension Program
University of Maryland

EDUCATION

1981 M.S. Food Science	Michigan State University
1975 B.S. Fisheries and Wildlife	Michigan State University

SELECTED PUBLICATIONS AND EXTENSION PRODUCTS

Rippen, T. 1995-2008. Industry participants in the Maryland Crabmeat Quality Assurance Program receive reports related to in-plant sampling approximately every two weeks during the crab processing season (235 reports per year on average), including sanitation and pathogen findings.

E. S. Garrett, editor, with contributions by Rippen and nine others. 2007. Report of the Seafood Safety Workshop: Control of Scombrototoxin and Mercury in Marine Fish. U.S. Dept. of Commerce, National Marine Fisheries Service, and PacMar, Inc., 78 pp.

Rippen, T., Hackney, C. and Flick, G, Knobl, G. and D. Ward. 1993, revised 2006. Seafood Pasteurization and Minimal Processing Manual. Virginia Cooperative Extension and Sea Grant manual, VPI-SG-93-01, 195 pp.

A.I. Senkel, Jr., B. Jolbitado, E.M. Butler and T.E. Rippen. 2005. A comparison of different processing methods for picked blue crab (*Callinectes sapidus*). J. Food Protection 68 (2) 360-365.

Rippen, T. 2004. Example histamine control strategies for commercial fisheries. A series of model plans for assisting fishermen and commercial buyers with seafood safety and regulatory requirements related to scombrototoxin prevention. Part of a set of web-based presentations and training tools prepared for Sea Grant and the National Seafood HACCP Alliance.

SELECTED GRANTS

Prevalence, growth, survival and control of *Listeria monocytogenes* in blue crab meat. S. Parveen (PI), T. Rippen, J. Schwarz, and M. Jahncke. USDA CSREES 1890 Capacity Building grants (research). 10/01/05-09/30/08. \$299,605.

Microbial models of the effect of storage temperature on the growth and survival of *Vibrio* species in oysters. 2005. S. Parveen, M. L. Tamplin, A. DePaola, J. Schwarz, K. Yoon, and T. Rippen. USDA CSREES National Research Initiative (NRI) Food Safety, 02/15/05-12/14/08. \$ 410, 000.

Thermal Properties of Alternative Packaging Systems for Air-shipping Seafood. Maryland Technology Development Corporation, a state industry advancement group. Joint with The Crab Place (thecrabplace.com), Crisfield, MD, March 1, 2006 – December 31, 2007.

Improving Crab Industry Profitability through Product and Process Improvement. Maryland Department of Natural Resources (state administrator for National Marine Fisheries Service grant funds), October 1, 2003-September 30, 2005, \$250,000.

GREGG J. RIVARA

Cornell Cooperative Extension- Suffolk
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EDUCATION:

M.S., Marine Sciences Research Center, State University of New York at Stony Brook, Marine Environmental Science Program 1985.

B.S. (cum laude), Southampton College of Long Island University, Marine Science/Biology 1982.

POSITIONS:

Extension Educator, Aquaculture Specialist since 12/86. Working with existing and potential aquaculture audiences in Southeastern New York State by providing research-based information to solve problems and increase profitability. Performing applied research projects related to new technologies/processes. Assist with permit applications and new business start-ups. Overseeing a shellfish hatchery/nursery for local towns on a contractual basis since 1991. Supervising three full time personnel. Site Director of the Suffolk County Marine Environmental Learning Center since 1991. Past Editor of *On The Water*, a bimonthly Extension newsletter. Past Associate Editor of *Northeastern Aquaculture*, the quarterly newsletter of the Northeastern Regional Aquaculture Center (NRAC). Past member (multiple terms) of NRAC's Technical Advisory Council. Founding board member of the East Coast Shellfish Research Institute since 2007.

Bay Management Specialist, Town of Islip, NY 6/86-12/86. Duties included design and construction of a municipal shellfish hatchery/nursery; surveying the town's hard clam population; performing seed planting and creating spawner sanctuaries.

Technical Specialist, Marine Sciences Research Center, SUNY, Stony Brook, 2/85-6/86. Duties included design and construction of various experimental apparatus for use in applied and basic research; culturing microalgae and shellfish larvae for use in experiments.

SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS:

National Shellfisheries Association; World Aquaculture Society, East End Marine Farmers Association, East Coast Shellfish Growers Association, Secretary of the East Coast Shellfish Research Institute.

SELECTED PUBLICATIONS:

- Rivara, G. and R.M. Patricio. 2004. Lipid Enrichment of eastern oyster broodstock for increased larval settlement. *Journal of Shellfish Research*, 23(2) p. 641 (abstract).
- Rivara, G., K. Tetrault and R.M. Patricio. 2002. A low cost floating upwelling shellfish nursery system- Construction and operations guide. Cornell Cooperative Extension fact sheet.
- Rivara, G. and J. Aldred. 2000. Small scale oyster farming- Another option for Long Island commercial fishermen. Cornell Cooperative Extension-produced 17-minute video for the National Marine Fisheries Service Fishing Industry Grants program.
- Gall, K. and G. Rivara. 2000. HACCP guide for the aquaculture industry. Northeastern Regional Aquaculture Center Publication No. 00-005.
- Rivara, G. and S. Czyzyk. 1995. Effects of flow and stocking density on growth rates and survival of eastern oysters with juvenile oyster disease. *Journal of Shellfish Research*, 14(1) p. 247 (abstract).
- Bricelj, V.M., S.E. Ford, F.J. Borrero, F.O. Perkins, G. Rivara, R.E. Hillman, R.A. Elston and J. Chang. 1992. Unexplained mortalities of hatchery-reared, juvenile oysters, *Crassostrea virginica* (Gmelin). *Journal of Shellfish Research*, 11(2): 331-347.

ROXANNA M. SMOLOWITZ

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Bristol, RI 02809
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Education: 1975-76 B.A. Indiana State University
1977-81 D.V.M. Purdue University
1982-84 Resident in Pathology, Angell Memorial An. Hospital, Boston, MA
1985-87 Bay Foundation Fellowship, MBL, Woods Hole, MA

Recent Employment:

1988-95 Visiting Investigator, Woods Hole Oceanographic Institution, Woods Hole, MA
1989-95 Research Associate in Pathology, School of Veterinary Medicine, U. Penn.
1995-99 Senior Research Investigator in Pathology, University of Pennsylvania
1999- 2008 Laboratory Animal Veterinarian/Aquatic Veterinary Pathologist, MBL
2007- 2009 Director of Animal Health, New England Aquarium, Boston, MA
2009 - Visiting Assistant Professor, Roger Williams University, Bristol, RI

Veterinary Licensure: Massachusetts # 2496

Bibliography: Selected Original Papers

Smolowitz, Roxanna and Sandra E. Shumway. 1997. Possible cytotoxic effects of the dinoflagellate, *Gyrodinium aureolum*, on juvenile bivalve molluscs. *Aquaculture Inter.* 5: 291-300.

Smolowitz, R., D. Leavitt and F Perkins. 1998. Observations of a Protistan disease similar to QPX in *Mercenaria mercenaria* (hard clams) from the coast of Massachusetts. *J. Invert. Pathol.* 71: 9-25.

S. T. Tettelback, C. Smith, R. **Smolowitz**, K. Tetrault and S. Dumais. 1999. Evidence for fall spawning of northern bay scallops *Argopecten irradians irradians* (Lamarck 1819) in New York. *J. Shellfish Res.* 18: 47-58.

Noga, E.J., R. **Smolowitz** and L.H. Khoo. 2000. Pathology of shell disease in the blue crab, *Callinectes sapidus* Rathbun, (Decapoda: Portunidae). *J. of Fish Diseases* 23: 389-399.

Smolowitz, R., Chistoserdov, A., and A. Hsu. 2005. Epizootic shell disease in American lobster, *Homarus americanus*. IN (Tlusty, M.F., Halvoarson, H.O., Smolowitz, R. and Sharma. U. , eds) Lobster Shell Disease Workshop. Aquatic Forum Series 05-1. New England Aquarium, Boston, MA. Pages 1-11.

Smolowitz, R. 2006. Gastropods. In (G. Lewbart Ed.) *Invertebrate Medicine*. Blackwell Publishing, Ames, Iowa. Pp.65-78.

Ford, S. and R. **Smolowitz**. 2007. Infection dynamics of an oyster parasite in its newly expended range. *Mar. Biol.* 151: 119-133.

Lyons, M.M., R. **Smolowitz**, M. Gomez-Chiarri, J. E. Ward. 2007. Epizootiology of Quahog Parasite Unknown (QPX) Disease in Northern Quahogs (= hard clams) *Mercenaria mercenaria*. *J. Shellfish Res.* 26: 371-381.

Spitsbergen, J., V. Blazer, P. Bowser, K. Cheng, K. Cooper, T. Cooper, S. Frasca Jr., D. Groman, C. Harper, J. Law, G. Marty, R. **Smolowitz**, J. St. Leger, D. Wolf, J. Wolf. 2009. Finfish and aquatic invertebrate pathology resources for now and the future. *Comp. Biochem and Phys.* 149: 249-257.

De Faveri, J., R. Smolowitz and S. Roberts. 2009. Development and validation of a real-time quantitative PCR assay for the detection and quantification of *Perkinsus marinus* in the Eastern Oyster, *Crassostrea virginica*. *J. Shellfish Res.* 29: 459-464.

Daniel E. Terlizzi, Water Quality Specialist

Sea Grant Extension Program, University of Maryland, Center of Marine Biotechnology, Columbus Center, 701 E. Pratt Street, Baltimore, MD 21202

Educational Background

1981, The University of Maryland, Department of Botany, Major: Plant Physiology
Degree: Ph.D.

1977, The University of Maryland, Department of Botany, Major: Plant Physiology
Degree: M.S.

1973, St. Mary's College of Maryland, Major: Biology,
Degree: B.S.

Research Interests:

Water Quality Management in Aquaculture
Algal Physiology, Ecology and Management
Aquaculture and Natural Resource Policy

SELECTED RELEVANT JOURNAL PUBLICATIONS

Weybright, T.J., Terlizzi, D.E. and Ferrier, M.D. 2008. Chemical Characterization of the Algistatic Fraction of Barley Straw (*Hordeum vulgare*) inhibiting *Microcystis aeruginosa*. *Journal of Applied Phycology*, in press.

Guedes M.R., Schoonover C. and D.E. Terlizzi. 2008. Nitrogen Uptake Kinetics in Aquatic Vascular Plants in vitro and in Recirculating Trout Aquaculture Effluent. Proceedings of the 7th International Recirculating Aquaculture Conference. July 25-27 Roanoke, Va.

Saito, K. Drgon, T, Krupatkina, D, Drgonova, J, Terlizzi, D, Mercer, N, and Vasta, G. 2007. Effect of Biotic and Abiotic Factors on In Vitro Proliferation, Encystment and Excystment of *Pfiesteria piscicida*. *Applied and Environmental Microbiology*, 73 (20) pp. 6410-6420.

Terlizzi, D.E. 2006. Water Quality, Agriculture and *Pfiesteria* in the Chesapeake Bay: The Extension Bridge Over Troubled Waters. *Journal of Extension*. October Article No. 5FEA3.
<http://www.joe.org/joe/2006october/a3.shtml>.

Terlizzi, D.E., Garbini, B., and Adler- Ivanbrook, L. 2006. Ammonia uptake in Chesapeake Macroalgae and Application to Aquaculture Effluents. Proceedings of 6th International Recirculating Aquaculture Conference, Roanoke, Va.

M.D. Ferrier, BR Butler, DE Terlizzi and RV Lacouture. 2005. The Effects of Barley Straw (*Hordeum vulgare*) on the Growth of Freshwater Algae. *Bioresource Technology*. vol.96 pp. 1788-1795.

Deeds, JR, Mazzacarro AP, Terlizzi, DE and Place AR. Treatment options for the control of the Ichthyotoxic dinoflagellate *Karlodinium micrum* in an estuarine aquaculture facility: A case study. Proceedings of the second International Conference on Harmful Algae management and Mitigation, Nov. 12-16, Qingdao, China. In *Harmful Algae Management and Mitigation*. Hall, S., Etheridge, S., Anderson, D. Kleindinst, J., Zhu, M. and Zou, Y. (Eds.), Asia-Pacific Economic Cooperation (Singapore): APEC Publication #204-MR-04.2.PP.177-181.

Terlizzi, D.E., Ferrier, M.D., Armbruster, E. and Anlauf, K. 2002. Inhibition of Dinoflagellate Growth by Extracts of Barley Straw (*Hordeum vulgare*). *Journal of Applied Phycology*, 14:275-280.

Deeds, J.R., Terlizzi, D.E., Adolf, J.E., Stoecker, D.K. and Place, A.R. 2002. Toxic Activity from Cultures of *Gyrodinium galatheanum* (Dinophyceae)-A Dinoflagellate Associated with Fish Mortalities in an Estuarine Aquaculture Facility. *Harmful Algae*, 1: 169-189.

Glibert, P.M. and Terlizzi, D.E. 1999. Cooccurrence of Elevated Urea Levels and Dinoflagellate Blooms in Temperate Estuarine Aquaculture Ponds. *Applied and Environmental Microbiology*, 65:12, pp.5594-5596.

NAME: Donald Webster

Agent, Regional Extension Specialist
University of Maryland, Wye Research & Education Center
PO Box 169, Queenstown MD 21658

PHONE: 410-827-8056; **FAX:** 410-827-9039; **EMAIL:** dwebster@umd.edu

EDUCATION:

College or University	Major	Degree/Year
University of Maryland Eastern Shore	Agriculture & Extension Education	M.S., 2002
University of Rhode Island	Natural Resources	B.S., 1974
University of Rhode Island	Marine Technology	A.S., 1973

PROFESSIONAL EXPERIENCE:

1990-present	Regional Extension Specialist, University of Maryland Extension, Wye Research & Education Center, Queenstown MD
1985-1990	Area Agent, Maryland Cooperative Extension, University of Maryland, Talbot County, Easton MD
1976-1985	Area Agent, Marine Science, Cooperative Extension Service, University of Maryland, Horn Point Environmental Lab, Cambridge MD
1974-1976	Area Agent, Marine Science, Cooperative Extension Service, University of Maryland, Anne Arundel County, Annapolis MD
1973-1974	Biological Technician, US Department of Commerce, NOAA/National Marine Fisheries Service, Gloucester MA

SELECTED GRANTS:

Shellfish aquaculture education and training. Lead P.I. Maryland Department of Natural Resources. \$300,000/3 years. 2009 (pending).

Publications team leader. Regional Extension Project, Northeastern Regional Aquaculture Center. \$15,695. 2009-2010.

Publications team leader. Regional Extension Project, Northeastern Regional Aquaculture Center. \$25,500. 2008.

Development of oyster aquaculture in Maryland and Virginia. National Oceanic and Atmospheric Administration, Chesapeake Bay Office, Annapolis MD. \$89,900. 2006-7.

SELECTED PUBLICATIONS:

Webster, D. 2007. Shipping and Transport of Fish. An invited chapter in "Recirculating Aquaculture." M. B. Timmons and J. M. Ebeling, editors, Cornell University. USDA, NRAC Publication No. 01-007, pp. 573-595, 8 photographs, 14 tables.

Webster, D. 2008. Education in Shellfish Aquaculture. Invited chapter in "Shellfish Aquaculture and the Environment." Manuscript accepted. Wiley-Blackwell Scientific Publications, Ames, IA.

Webster, D. 2009. Shellfish Aquaculture Development in Maryland and Virginia. NOAA Report upon termination of funded project. 51 pages, 15 photos, 8 tables, 2 figures. Available on web through Maryland Sea Grant.

Webster, D., J. Buttner, and G. Flimlin. 2008. Planning for Success in Your Aquaculture Business, Northeastern Regional Aquaculture Center, NRAC Publication No. 101-2008. 8 pp.

Buttner, J., G. Flimlin, and D. Webster. 2008. Freshwater Aquaculture Species for the Northeast. Northeastern Regional Aquaculture Center, NRAC Publication No. 102-2008. 8 pp.

Buttner, J., G. Flimlin, and D. Webster. 2008. Marine Aquaculture Species for the Northeast. Northeastern Regional Aquaculture Center, NRAC Publication No. 103-2008. 6 pp.

Flimlin, G., J. Buttner, and D. Webster. 2008. Aquaculture Systems for the Northeast. Northeastern Regional Aquaculture Center, NRAC Publication No. 104-2008. 8 pp.

Lazur, A., A. Hengst, E. Markin, D. Webster, K. Billing, D. Schuck and H. Buritsch. 2009. Community Pond Management. 10 pp. Maryland Sea Grant Publication Number UM-SG-SGEP-2009-01.



Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

1. To review and aid in compiling science-based information and educational resources for finfish aquaculture health resources designed to aid the aquaculture industry
2. To develop guidelines for monitoring, recording, evaluating and sampling of stocks at the farm level to assist in assembling and publishing technical information and guidelines into individual protocols and responses for finfish aquaculture
3. To develop and conduct a training workshop for extension and outreach practitioners

For my efforts in this proposal I am requesting \$8,000 over the project period.

Sincerely,

Deborah A. Bouchard

SCHOOL OF ARTS AND SCIENCES

Biology
Cat Cove



LETTER OF INTENT

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010


Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded.

Joe Buttner (Salem State College) will assist with collection and compilation of technical information on aquaculture hazards for finfish (Objective 1); work with team to develop guidelines and protocols for monitoring, recording, evaluating and sampling of finfish at the farm level as well as serving a bridge between producers, extension personnel, and pathologists (Objective 2); and help with development of workshops to disseminate information to various user groups. Dr. Buttner is particularly well suited to assist with compilation of documents and synthesis of materials as he has authored several fact sheets and other publications, organized and assisted with the organization of numerous workshops, and possesses documented competencies in finfish and shellfish culture (as evidenced by several dozen publications).

For my efforts in this proposal I am requesting \$4,000 over the project period.

Sincerely,


Joseph Buttner

Getchis, Tessa

From: Simmons, Ken (FWE) [Ken.Simmons@state.ma.us]
Sent: Monday, February 01, 2010 12:55 PM
To: Getchis, Tessa
Subject: support

Dear Dr. Getchis

The purpose of this e-mail is to offer my strong support for the grant that the Massachusetts Aquaculture Center's are submitting to train extension workers, veterinarians, and ultimately growers on managing fish health risks. This type of training is particularly relevant with the emergence of disease such as ISA, VHS, SVCV and KHV. Spread of fish diseases poses a risk both to fisheries resources and aquaculture production. Training of growers on both surveillance identification of those risks and the regulations in place to prevent their spread is therefore crucial.

Massachusetts is not able to provide adequate fish health surveillance and outreach support to its growing aquaculture industry. The products produced through this grant proposal, if it is funded, will lead to both growers and fish-product dealers becoming better educated on how important fish health issues are and the importance of not contributing to their spread. It also will serve as a conduit for better informing the industry on how to conform to various state regulations for both importing and exporting their products.

As Chief of Hatcheries for the Massachusetts Division of Fisheries and Wildlife I routinely review applications by growers and other licensed entities in the freshwater aquaculture industry in Massachusetts. Based on my experience in reviewing these documents I am convinced that better training and education of the industry will result in a better product and protection of our fisheries resources.

Please feel free to contact me if I can provide more information.

Sincerely,

Ken Simmons

Ken Simmons, PhD
Chief of Hatcheries
Massachusetts Division of Fisheries and Wildlife
Field Headquarters
Westboro, MA 01581
508-389-6332

Delaware Aquaculture Resource Center

Sea Grant Marine Advisory Program, College Earth, Ocean and Environment
Hugh R. Sharp Campus, University of Delaware, 700 Pilottown Road, Lewes, DE 19958

Phone: 302-645-4060; Fax: 302-645-4213; Email: <ewart@udel.edu>
Home Page: <http://darc.cms.udel.edu/>

January 20, 2010

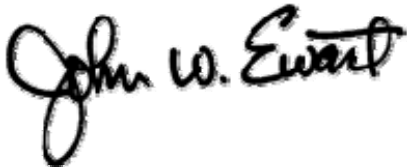
Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. My activities in the project will be to participate with the Shellfish Working Group in developing and reviewing materials and protocols; assist with the organization and presentation of industry training workshops; and serve as Webmaster for the project Web page to coordinate all Internet related shellfish, finfish and educational outreach project activities. For my efforts in this proposal I am requesting \$10,000 over the project period.

Sincerely,

A handwritten signature in black ink that reads "John W. Ewart". The signature is written in a cursive style with a large, stylized 'J' and 'E'.

John W. Ewart
Aquaculture & Fisheries Specialist

February 1, 2010

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will actively assist the finfish disease hazard team with the following tasks:

- generating a **literature review** of relevant finfish disease, pest, predator, and biofouling resources;
- planning and instructing HACCP **training workshops** for the finfish aquaculture industry; and,
- helping with **industry outreach** by assisting the hazard team with a series of local workshops that are organized and managed by individual extension personnel and provide resources and project related materials to local farmers.

For my efforts in this proposal I am requesting \$4,000 over the project period.

Sincerely,



Ann Faulds
Associate Director

January 25, 2010
Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

Dear Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

I will be involved in the following areas of the grant:

- Solicit feedback from a group of project advisors (industry, technical) on what health hazard information is a priority for shellfish producers.
- Define what key information will help aquatic animal health professionals to better and more efficiently respond to mortality events to reduce losses, and potentially minimize and/or prevent others in the future.
- Develop a technical bulletin for shellfish growers on how to respond to a sick or dying crop, either in the nursery or growout phase, and to collect or communicate the appropriate information to animal health professionals.
- Oversee Training Workshops and Focus Groups to pre-test the protocols for reporting and managing shellfish aquaculture mortalities prior to the training workshop.
- Develop a training session for the regional aquaculture extension agents, aquatic animal health professionals, regulators/resource managers, through a two-day workshop including shellfish hazard sessions, which reviews information about major diseases of aquatic organisms, pests of aquaculture species, and organisms that cause human illness and practical. This will also serve to train the audience on how to use the protocols.
- Oversee the scheduling of a series of local workshops, organized and managed by individual extension personnel, to provide the information and materials developed in the context of this project to local farmers.
- Amend the East Coast Shellfish Growers Association Code of Practice and Best Management Practices to reflect the protocols developed by this project.

For my efforts in this proposal I am requesting \$10,000 over the project period.

Sincerely,

Gef Flimlin
Marine Extension Agent

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

February 2, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, I am writing this letter to declare my intent to coordinate this project if funded.

My responsibilities include: a) overall fiscal management of the project, b) overseeing the processing of subcontract agreements to cooperating institutions and reimbursements for travel associated with the project, c) convening all organizational meetings for the network, d) reporting on project development and milestones via progress and final reports, and presentations at industry meetings, and e) timely product development and for overall project assessment, including the evaluation of all products and activities developed through the project. In addition, I will identify and compile pertinent information on human health hazards caused from consumption of shellfish for incorporation into the shellfish protocols, and oversee a graduate student undertaking an economic impact analysis of both shellfish and finfish protocols.

For my efforts in this proposal I am requesting \$21,489 over the project period.

Sincerely,

A handwritten signature in cursive script that reads "Tessa Getchis".

Tessa Getchis



Delaware Sea Grant College Program
Marine Advisory Service

University of Delaware
Hugh R. Sharp Campus
700 Pilottown Road
Lewes, DE 19958-1298
URL: www.deseagrant.org

January 20, 2010

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

I will assist the project team with the planning; instructing; and evaluation of the HACCP based training programs about aquaculture health hazards for growers in the Northeast. I will also work with the project team to develop guidelines and protocols using the seven principles of HACCP to help growers, extension agents and aquatic health specialists including regulators ensure the health of aquaculture finfish and shellfish species.

For my efforts in this proposal I am requesting \$10,000 over the project period.

Sincerely,

Doris T. Hicks
Seafood Technology Specialist



UMass
Extension

Agriculture and Landscape Program

Department of Plant, Soil and Insect Sciences
Agricultural Engineering Building
250 Natural Resources Road
University of Massachusetts Amherst
Amherst, MA 01003-9295
phone: 413.545.1055
fax: 413.545.5858

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded.

As a partner in this project, I will:

- a) coordinate activities and reports by the Finfish Working Group;
- b) participate with the Finfish Working Group in developing and reviewing materials and protocols;
- c) assist in identifying a targeted location for the Training Workshop and developing a regional contact list of potential participants and coordinating mailing and other communications
- d) provide organizational services for the program of Finfish Outreach in Massachusetts

For my efforts in this proposal I am requesting \$10,000 over the project period.

Sincerely,


Craig Hollingsworth

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

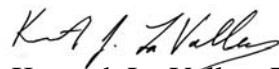
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I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following proposed objectives:

- The development of protocols which address health hazards confronting both shellfish and finfish aquaculture operations using a "HACCP" approach, and
- Assist with the implementation of outreach workshops , to provide the information and materials developed in the context of this project to local farmers.

I am acting as a non-funded participant in this proposal.

Sincerely,



Kenneth La Valley, PhD
Assistant Director, NH Sea Grant Extension



University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE
HORN POINT LABORATORY

POST OFFICE BOX 773
CAMBRIDGE, MD 21613-0775
(410) 228-8200
FAX (410) 221-8490
<http://www.umces.edu>

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I in my role as an Associate Professor with the University of Maryland will be actively involved in the Finfish Working Group by reviewing technical information and helping in the development of disease response guidelines and protocols. These materials will subsequently be used by the group to build a HACCP based disease response 'toolbox' for use by extension professionals.

For our efforts in this proposal we are requesting \$4000 over the project period. Please do not hesitate to contact me directly if you have questions. I can be reached via telephone at (410) 221-8474 or by e-mail at alazur@umces.edu.

Sincerely,

Andrew Lazur
Associate Professor and Extension Specialist

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

LIST TASKS

For my efforts in this proposal I am requesting \$10,000 over the project period.

Sincerely,

Dale Leavitt



DELAWARE STATE UNIVERSITY
COLLEGE OF AGRICULTURE & RELATED SCIENCES
Office of the Dean, Research Director and 1890 Administrator

February 3, 2010

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, Delaware State University will be actively involved in the Finfish Working Group by reviewing technical information and helping in the development of disease response guidelines and protocols. These materials will subsequently be used by the group to build a HACCP based disease response 'toolbox' for use by extension professionals.

For our efforts in this proposal we are requesting \$4,000 over the project period. Please do not hesitate to contact me directly if you have questions. I can be reached via telephone at (320) 857-6456 or by e-mail at dmcintosh@desu.edu.

Dennis McIntosh, Ph.D.
Associate Research Professor and
Extension Specialist – Aquaculture

Dyremple Marsh, Ph.D., Dean
College of Agriculture & Related Sciences

1200 N. DUPONT HIGHWAY • DOVER, DELAWARE 19901-2277 • (302) 857-6400 • FAX (302) 857-6402



Maine Sea Grant College Program

Main Office: 5784 York Complex • University of Maine • Orono ME 04469-5784
Phone: 207.581.1435 • Fax: 207.581.1426 • www.seagrant.umaine.edu

25 January, 2010

Dear Tessa;

This letter is to confirm my intent to participate in the current proposal to NRAC regarding the Regional Extension Project. I hope this work gets the funding it deserves, and I will participate on the shellfish topics within the project, relating to the four major objectives, including: background work for the section on Technical Information; helping to prepare the document on dead and dying shellfish; organizing support for training, and industry outreach. For this work, I will be paid \$4,000 over the project period.

Thank you for organizing and coordinating this proposal.

Sincerely,

Dana L. Morse
Maine Sea Grant / UMaine Cooperative Extension

Maine Sea Grant at Darling Marine Center
Clarks Cove • Walpole, Maine 04573 • Phone: 207.563.3146 x205 • Fax: 207.563.3119



THE LAND GRANT and SEA GRANT UNIVERSITY OF MAINE • A Member of the University of Maine System

LETTER OF INTENT

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 26, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded.

Diane Murphy, Cape Cod Cooperative Extension and Woods Hole Sea Grant, will assist with literature review and compilation of technical information on shellfish pests – working with team to develop a site response process, guidelines, and protocols for addressing shellfish disease outbreaks. I will assist with extension of this information to producers, extension personnel, and pathologists, and help with the development of workshops to disseminate information to various user groups.

I am not requesting any additional funds for my participation in this proposal.

Sincerely,



Diane C. Murphy
Fisheries & Aquaculture Specialist
Cape Cod Cooperative Extension & Woods Hole Sea Grant

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

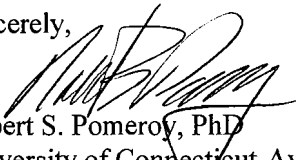
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I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

- An economic impact analysis of the protocols to address health hazards confronting both shellfish and finfish aquaculture operations.

For my efforts in this proposal I will participate as an unfunded collaborator.

Sincerely,



Robert S. Pomeroy, PhD
University of Connecticut-Avery Point
Agricultural and Resource Economics/CT Sea Grant
Room 380, Marine Science Building
1080 Shennecossett Road
Groton, Connecticut 06340-6048 USA
Tel: 1-860-405-9215
Fax: 1-860-405-9109 skype:bobpomeroy
E-mail: robert.pomeroy@uconn.edu

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

- I will assist with collection and compilation of technical information on aquaculture hazards for finfish
- Work with the finfish (and shellfish, where applicable) teams to develop guidelines and protocols for monitoring, recording, evaluating and sampling of finfish and shellfish at the farm level for the identified aquaculture hazards
- Help with development of workshops to disseminate information to various user groups

For my efforts in this proposal I will participate as an unfunded collaborator.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joshua Reitsma', is shown on a light blue rectangular background.

Joshua Reitsma



DEPARTMENT OF FISHERIES, ANIMAL AND VETERINARY SCIENCE
Woodward Hall, 9 East Alumni Avenue, Kingston, Rhode Island 02881 USA
Woodward Hall: 401-874-2477 • East Farm: 401-874-9297 • Peckham Farm: 401-874-4183

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will assist Donald Webster in the review and editing of the publications that will be produced during the course of the project.

For my efforts in this proposal I will participate as an unfunded collaborator.

Sincerely,

Michael A. Rice.



University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE
HORN POINT LABORATORY

POST OFFICE BOX 773
CAMBRIDGE, MD 21613-0775
(410) 228-8200
FAX (410) 221-8490
<http://www.umces.edu>

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I in my role as an Associate Professor with the University of Maryland will be actively involved in the Finfish Working Group by reviewing technical information and helping in the development of disease response guidelines and protocols. These materials will subsequently be used by the group to build a HACCP based disease response 'toolbox' for use by extension professionals.

For our efforts in this proposal we are requesting \$4000 over the project period. Please do not hesitate to contact me directly if you have questions. I can be reached via telephone at (410) 221-8474 or by e-mail at alazur@umces.edu.

Sincerely,

Andrew Lazur
Associate Professor and Extension Specialist



**Cornell University
Cooperative Extension
of Suffolk County**

1917 - 2007

Celebrating 90 years

**Suffolk County Marine
Environmental Learning Center**

3690 Cedar Beach Road
Southold, New York 11971
t. 631.852.8660
f. 631.852.8662

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 25, 2010

Dear Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the Shellfish Working Group by reviewing technical information and helping in the development of disease response guidelines and protocols. These materials will subsequently be used by the group to build a HACCP based disease response 'toolbox' for use by extension professionals.

For my efforts in this proposal I am requesting \$4,000 over the project period. Please do not hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Gregg Rivara".

Gregg Rivara
Aquaculture Specialist
Cornell Cooperative Extension - Suffolk County
gir3@cornell.edu



January 25, 2010

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

Dear Dr. Wheaton:

Please accept this letter as confirmation that I assisted in preparing the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded.

As a partner in this project, I will work with Ms. Doris Hicks and Dr. Andy Lazur to develop appropriate HACCP-based systems for controlling diseases in aquacultured finfish and shellfish. A couple of years ago I led a team that developed the Good Aquaculture Practices (GAQPs) 5-day train-the-trainer course offered by the Joint Institute for Food Safety and Applied Nutrition, a program administered through a cooperative agreement between the U.S. Food and Drug Administration and the University of Maryland.

The existing GAQPs course is offered to international audiences and focuses on human pathogen and residue control. These training materials must be revised and adapted for the domestic industry, targeting animal health through proper management and monitoring. I will coordinate with other recognized authorities in the application of HACCP and SOPs as aquaculture management tools.

For my efforts in this proposal I am requesting \$4,000 over the project period.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas E. Rippen", written in a cursive style.

Thomas E. Rippen
Seafood Technology Specialist
University of Maryland, UMES
Princess Anne, Maryland 21853
410-651-6636
terippen@umes.edu



**Cornell University
Cooperative Extension
of Suffolk County**

1917 - 2007

Celebrating 90 years

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Environmental Learning Center**

3690 Cedar Beach Road
Southold, New York 11971
t. 631.852.8660
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Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 25, 2010

Dear Dr. Wheaton:

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For my efforts in this proposal I am requesting \$4,000 over the project period. Please do not hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Gregg Rivara".

Gregg Rivara
Aquaculture Specialist
Cornell Cooperative Extension - Suffolk County
gir3@cornell.edu



Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 26, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in development of the extension materials that will address disease, human health and biosecurity issues in shellfish and finfish operations in the northeast. Specifically, I will provide disease expertise and advice in development of these materials for shellfish diseases and will actively help the P.I.s with writing and reviewing of the document.

For my efforts in this proposal I am requesting \$10,000 over the project period.

I believe this project is greatly needed and has the potential to affect not only aquaculture in the northeast, but also throughout the country.

Sincerely,

Roxanna Smolowitz, DVM
Visiting Assistant Professor
Roger Williams University
Ph: 401-254-3299
Email: rsmolowitz@rwu.edu

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

Dr. Wheaton:

Please accept this letter as confirmation that I have taken part in preparation of the proposal entitled, "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach," which is being submitted in response to the Northeast Regional Aquaculture Center's 2010 Request for Full Proposals, by Ms. Tessa Getchis at the University of Connecticut. I am writing this letter to declare my intent to participate in this project if funded.

I am writing this letter to declare my intent to participate in this project if funded. As a partner in this project, I will be actively involved in the following:

- Completing Fact Sheet on Harmful Algae in Aquaculture in the North east
- Continuing Applied Research on HAB management in Aquaculture
- Participation in NRAC Extension Programs

For my efforts in this proposal I am requesting \$4,000 over the project period.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Terlizzi". The signature is written in a cursive, flowing style with a large initial "D" and "T".

Dan Terlizzi

Dr. Fredrick Wheaton, Director
Northeastern Regional Aquaculture Center
University of Maryland
2113 Animal Sciences Bldg. 142
College Park, MD 20742-2317

January 20, 2010

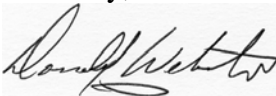
Dr. Wheaton:

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As a partner in this project, I will will provide organizational services for workshops in the Maryland area as well as project support to include: a) assisting in identifying end-users and beneficiaries (Item 2.2); b) participating with the Shellfish Working Group in developing and reviewing materials and protocol; c) assisting in identifying a targeted location for the Training Workshop and developing a regional contact list of potential participants and coordinating mailing and other communications (objective 4); providing organizational services for the program of Shellfish Outreach 3 in Maryland. In addition, Webster will support the activities of the Finfish Working Group through interaction with A. Lazur and D. McIntosh as he has with prior NRAC extension projects.

For my efforts in this proposal I am requesting \$4,000 over the project period.

Sincerely,



Donald Webster
Regional Extension Specialist

THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS



Department of Agricultural Resources

251 Causeway Street, Suite 500, Boston, MA 02114
617-626-1700 fax: 617-626-1850 www.mass.gov/agr



DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

SCOTT J. SOARES
Commissioner

Tessa Getchis
Connecticut Sea Grant
University of Connecticut
1080 Shennecossett Road
Groton, CT 06340-6048

January 25, 2010

Dear Ms. Getchis,

This letter is in support of the NRAC 2010 proposal entitled "Aquaculture health hazards – developing outreach services to the region's farmers using a HACCP approach". The Massachusetts Department of Agricultural Resources encourages and promotes aquaculture which is environmentally sustainable, safe, and economically efficient. This proposal dovetails well with the goals of the Department.

This proposal seeks to develop written protocols to address public health protection and aquatic animal disease/pest management through implementation of Hazard Analysis/Critical Control Point principles. This approach utilizes prevention, monitoring and verification practices to assure a safe, healthy food product, as well as a strict record keeping component to facilitate traceback. Shellfish and finfish disease prevention and management are important issues for the aquaculture industry, and HACCP can prove a useful tool in acquiring and maintaining disease free aquatic animals.

Although HACCP can be a complicated process, this NRAC proposal includes a strong training and industry outreach component, a crucial element for its success. Considering recent publicity of such public health issues as *Vibrio vulnificus* and *Vibrio parahaemolyticus*, shellfish farmers will be called upon to further protect and demonstrate the safety of their product. In this respect, this NRAC proposal will be an effective tool to assist shellfish farmers while helping to protect public health.

Favorable consideration of this proposal will allow the individuals involved with this project to work collectively, efficiently utilizing a vast resource of experience in furtherance of this unique realm of agriculture. The dissemination of the information gathered from this project will assist the farming community in continuing to provide the safest, highest quality product with the least environmental impact. Thank you for your consideration,

Sean F. Bowen

Aquaculture Specialist
Massachusetts Department of Agricultural Resources
251 Causeway Street, Suite 500
Boston, MA 02114

ECSGA
1623 Whitesville Rd.
Toms River, NJ 08755
www.ECSGA.org



Tom Kehoe
President
Ed Rhodes
Vice President
Chad Ballard III
Secretary
Gef Flimlin
Treasurer

February 15, 2010

Dear NRAC TIAC,

I am writing to enthusiastically endorse the NRAC proposal: USDA Cooperative State Research, Education and Extension Funding, or the so-called "Extension Project." As I think back over the years that I have been involved with NRAC, I think one of the best legacies of this organization is that (with the support of NRAC) we have developed a talented and dedicated team of aquaculture extension professionals who care about the industry and who continue to do a great job in supporting its growth and development.

Without the support of the many NRAC-funded extension efforts, I doubt that many of our most prosperous farms would have ever gotten off the ground. Whether it was fundamental permitting information, guidance to new growers or the education of established firms, the NRAC extension team has been integral to the development of shellfish aquaculture in the Northeast.

Developing new operations in the contentious and heavily used marine environment of the Northeast has always been a significant challenge. It speaks well to our extension network's contribution that shellfish aquaculture in the Northeast remains one of the fastest growing segments of aquaculture in our nation, even while we are in a recession and other aquaculture industries remain largely constrained by regulations and cheap imports.

Significant challenges to our industry remain, and we will continue to rely heavily on our extension network to help us overcome regulatory roadblocks, user-conflicts, marketing issues, diseases and public health concerns. We appreciate your support.

Robert B Rheault, PhD.
Executive director
ECSGA

Getchis, Tessa

From: Simmons, Ken (FWE) [Ken.Simmons@state.ma.us]
Sent: Monday, February 01, 2010 12:55 PM
To: Getchis, Tessa
Subject: support

Dear Dr. Getchis

The purpose of this e-mail is to offer my strong support for the grant that the Massachusetts Aquaculture Center's are submitting to train extension workers, veterinarians, and ultimately growers on managing fish health risks. This type of training is particularly relevant with the emergence of disease such as ISA, VHS, SVCV and KHV. Spread of fish diseases poses a risk both to fisheries resources and aquaculture production. Training of growers on both surveillance identification of those risks and the regulations in place to prevent their spread is therefore crucial.

Massachusetts is not able to provide adequate fish health surveillance and outreach support to its growing aquaculture industry. The products produced through this grant proposal, if it is funded, will lead to both growers and fish-product dealers becoming better educated on how important fish health issues are and the importance of not contributing to their spread. It also will serve as a conduit for better informing the industry on how to conform to various state regulations for both importing and exporting their products.

As Chief of Hatcheries for the Massachusetts Division of Fisheries and Wildlife I routinely review applications by growers and other licensed entities in the freshwater aquaculture industry in Massachusetts. Based on my experience in reviewing these documents I am convinced that better training and education of the industry will result in a better product and protection of our fisheries resources.

Please feel free to contact me if I can provide more information.

Sincerely,

Ken Simmons

Ken Simmons, PhD
Chief of Hatcheries
Massachusetts Division of Fisheries and Wildlife
Field Headquarters
Westboro, MA 01581
508-389-6332

**UNITED STATES DEPARTMENT OF AGRICULTURE
COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE
ASSURANCE STATEMENT(S)**

OMB approved 0524-0039
Expires 03/31/2004

STATEMENT OF POLICY - Institutions receiving CSREES funding for research are responsible for protecting human subjects, providing humane treatment of animals, and monitoring use of recombinant DNA. To provide for the adequate discharge of this responsibility, CSREES policy requires an assurance by the institution's Authorized

Organizational Representative (AOR) that appropriate committees in each institution have carried out the initial reviews of protocol and will conduct continuing reviews of supported projects. CSREES also requires AOR certification by citing a timely date that an appropriate committee issued an approval or exemption.

NOTE: Check appropriate statements, supplying additional information when necessary.

1. **INSTITUTION**
University of Connecticut

2. **CSREES PROJECT NUMBER OR
AWARD NUMBER (if known)**

3. **PROJECT DIRECTOR(S)**
Tessa Getchis

4. TITLE OF PROJECT

Aquaculture health hazards – developing outreach services to the region's farmers, extension professionals and aquatic animal health professionals using a HACCP approach

A. BIOSAFETY OF RECOMBINANT DNA

- ☒ Project does not involve recombinant DNA.
☐ Project involves recombinant DNA and was either approved () or determined to be exempt () from the NIH Guidelines by an Institutional Biosafety Committee (IBC) on _____ (Date).

This performing organization agrees to assume primary responsibility for complying with both the intent and procedures of the National Institutes of Health (NIH), DHHS Guidelines for Research Involving Recombinant DNA Molecules, as revised.

B. CARE AND USE OF ANIMALS

- ☒ Project does not involve vertebrate animals.
☐ Project involves vertebrate animals and was approved by the Institutional Animal Care and Use Committee (IACUC) on _____ (Date).

This performing organization agrees to assume primary responsibility for complying with the Animal Welfare Act (7 USC, 2131-2156), Public Law 89-544, 1996, as amended, and the regulations promulgated thereunder by the Secretary of Agriculture in 9 CFR Parts 1, 2, 3, and 4. In the case of domesticated farm animals housed under farm conditions, the institution shall adhere to the principles stated in the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, Federation of Animal Science Societies, 1999.

C. PROTECTION OF HUMAN SUBJECTS

- ☒ Project does not involve human subjects.
☐ Project involves human subjects and
Was approved by the Institutional Review Board (IRB) on _____ (Date). Performing Institution holds a Federal-wide assurance number _____; if not, a Single Project Assurance is required.
☐ Is exempt based on exemption number _____.
Specific plans involving human subjects depend upon completion of survey instruments, prior animal studies, or development of material or procedures. No human subjects will be involved in research until approved by the IRB and a revised Form CSREES-2008 is submitted.

This performing organization agrees to assume primary responsibility for complying with the Federal Policy for Protection of Human Subjects as set forth in 45 CFR Part 46, 1991, as amended, and USDA regulations set forth in 7 CFR 1c, 1992. All nonexempt research involving human subjects must be approved and under continuing review by an IRB. If the performing organization submits a Single Project Assurance, supplemental information describing procedures to protect subjects from risks is required.

SIGNATURE OF AUTHORIZED ORGANIZATIONAL REPRESENTATIVE

Antje Hamisch

TITLE
**Antje Hamisch, Ph.D.
Assistant Director, OSP**

DATE

2-16-10

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 .50 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

U.S. DEPARTMENT OF AGRICULTURE

Certification Regarding Debarment, Suspension, and Other
Responsibility Matters - Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989 Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
- (a) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) have not within a three-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

University of Connecticut, Project: Aquaculture health hazards – developing outreach services to the region's farmers, extension professionals and aquatic animal health professionals using a HACCP approach

Organization Name

PR/Award Number or Project Name

Antje Hamisch, Ph.D.
Assistant Director, OSP

Name(s) and Title(s) of Authorized Representative(s)

Signature(s)

Date

Antje Hamisch

2-16-10

UNITED STATES DEPARTMENT OF AGRICULTURE
CERTIFICATION REGARDING
DRUG-FREE WORKPLACE REQUIREMENTS (GRANTS)
ALTERNATIVE I - FOR GRANTEEES OTHER THAN INDIVIDUALS

This certification is required by the regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701 *et seq.*), 7 CFR Part 3017, Subpart F, Section 3017.600, Purpose. The January 31, 1989, regulations were amended and published as Part II of the May 25, 1990 **Federal Register** (pages 21681-21691). Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the grant.

(Before completing Certification, read instructions on page 2)

Alternative I

A. The grantee certifies that it will or will continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about --
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted --

- (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, State, zip code)

Check ☐ if there are workplaces on file that are not identified here.

University of Connecticut
Organization Name

Project: Aquaculture health hazards – developing outreach services to the region's farmers, extension professionals and aquatic animal health professionals~ using a HACCP approach

Award Number or Project Number Antje Hamisch, Ph.D.
Assistant Director, OSP

Name and Title of Authorized Representative

Antje Hamisch 2-16-10
Signature Date

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

CERTIFICATION REGARDING LOBBYING - CONTRACTS, GRANTS, LOANS
AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement;

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this

Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions;

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

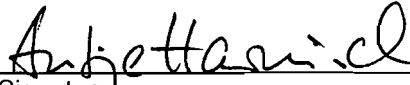
University of Connecticut, Project: Aquaculture health hazards – developing outreach services to the region's farmers, extension professionals and aquatic animal health professionals—using a HACCP approach

Organization Name

Antje Hamisch, Ph.D.
Assistant Director, OSP

Award Number or Project Name

Name and Title of Authorized Representative


Signature

2-16-10
Date