

NATIONAL CENTER FOR
FOOD PROTECTION AND DEFENSE
A HOMELAND SECURITY CENTER OF EXCELLENCE

NCFPD Supplemental Funding 2009/10
(October 1, 2009 – August 31, 2010)

REQUEST FOR PROPOSALS
Submission Deadline: Friday, July 31, 2009

The Department of Homeland Security (DHS), Science & Technology Directorate, University Programs Office, has approved the continuation of the grant for the National Center for Food Protection and Defense (NCFPD) for one year, based on its evaluation of NCFPD's performance in the initial five-year period. Please note this is separate from the six year re-competition funding that is still under review.

NCFPD is now considering applications for funding projects to be completed in **up to one year** through a peer-review process. This 2009-10 Request for Proposals (RFP) outlines NCFPD's current research priorities that can be addressed either through new projects or extensions of FY08/09-funded projects. All full proposals for project funding in the 2009-10 continuation period will be reviewed by members of the NCFPD Research Evaluation and Advisory Panel (REAP), with additional external reviewers included as needed. **Funding can be requested for up to 12 months beginning October 1, 2009 and completed by September 30, 2010.** While there are no pre-established budget limitations, the majority of NCFPD projects are funded at \$30,000 to \$250,000 per year. Of particular interest are pilot projects that may be high risk, but offer significant potential for breakthrough science.

Currently funded project teams: Proposals for new research projects building on the accomplishments of previously funded efforts must characterize a new phase of work including **new deliverables** that are distinct from those identified in earlier projects.

New projects proposals: Proposals for new projects must address the specific aims outlined below. **We strongly encourage new projects to complete the attached Project Summary form (including abstract) for feedback prior to completion of the full proposal.** The deadline for submitting this form for preliminary review and feedback is **July 13, 2009**. Submit the Project Summary form (including abstract) via email to: ncfpd@umn.edu. Feedback will be provided by **July 20**. Full proposals are due **Friday, July 31, 2009** via email to ncfpd@umn.edu. See "Required Proposal Elements" on page 4 for a complete description of required proposal components and "Submission Guidelines" on page 5 for additional information.

PRIORITY AREAS OF RESEARCH

NCFPD has identified the following project aims for 2009/10 Supplemental Funding Projects. Proposals must address one or more of the following aims:

Aim 1.0 -- Agents in Complex Food Matrices

Given that the majority of the select agents and other chemicals of potential use for intentional food contamination are not typically present in food systems, capabilities are currently limited for (1) rapidly detecting agents in food systems and characterizing their interactions with food, or (2) identifying and developing surrogates for these agents for various research needs. These data and strategies remain important for interventions and countermeasures in preventing final retail distribution and consumer consumption of intentionally contaminated food. To that end, the specific research aims to address this include (please contact NCFPD if you need clarification of potential chemicals or toxins of concern):

1.1: **Characterization** of the thermal, acid, and base stability of chemicals or toxins, particularly in typical food environments and processing conditions, for which there is limited published data;

1.2 **Assessment of stability** of select chemical agents or categories of agents (e.g., protein toxins, organophosphates, etc.) in various complex food matrices under a variety of food processing, handling, and/or storage conditions. Determination of mechanisms of inactivation or denaturation of one type of agent that could be applied to other agents in other matrices is encouraged;

1.3: **Identification of surrogates**, either individually (for specific chemicals or toxins of potential concern) or in sets (representing specific properties of groups or classes of agents.) The surrogates should be those suitable for use in predicting the behavior of the chemicals or toxins of concern for studies such as those outlined in Aim 1.3 or for decontamination, disposal, or detection and diagnostic research efforts;

1.4: **Rapid, non-specific or categorical approaches** for identifying contaminated food products, especially by select chemical agents. Examples from recent FDA-CFSAN projects include conductivity shifts and color shifts in juice products that have been contaminated (additional examples at FDA/CFSAN, Office of Food Safety, Defense and Outreach, *Summaries of Competitive Food Defense Research Reports, 2005*, available at: <http://www.fda.gov/Food/FoodDefense/FoodDefensePrograms/FoodDefenseResearchReports/ucm081217.htm>

1.5: **Sample acquisition and pre-analytical processing** to render representative samples of food products ready for rapid agent detection of contamination for multiple detection platforms. This includes sample acquisition strategies tailored to the unique characteristics of potential deliberate food contamination events, as opposed to routine (unintentional) contamination/food safety issues;

1.6: **Detection and diagnostic strategies** that (a) are very low cost and (b) that would enable high-frequency testing applied at the last likely or highest impact contamination point, allowing for identification of the contamination agent prior to widespread consumption of the product. An example could be post-final bulk tank sampling of orange juice with confirmatory results within 72 hours;

1.7: **Sampling strategies** that (a) maximize the probability of detecting intentional contamination and limiting distribution of the product, (b) take advantage of specific attributes of both the supply chain and processing of the food product, and (c) recognize that intentional contamination sufficient to cause widespread public health harm will involve high levels, and not low levels, of the contaminating agent. This aim can be combined with either 1.5 or 1.6.

Aim 2.0 Event Modeling for consequence, risk, and vulnerability assessment, and preparedness and response/recovery and decision support in the case of an event. This aim includes the areas of Public Health Response & Epidemiology, Economic Analysis, and inputs from other disciplines needed to enable the full functioning of existing modeling efforts being conducted;

Aim 3.0 Systems Strategies for enhancing the preparedness, responsiveness, recoverability, and resiliency of the food system. This aim includes the areas of Supply Chain Resiliency and Economic Analysis;

Aim 4.0 Risk Communication to study communications and outreach strategies before, during, and after an event that reduce the potential consequences of the event. This aim includes research into the psychological and social aspects of stakeholders' relationships to such events; and

Aim 5.0 Education & Programs of Study to train the next generation of leaders in food system defense. This aim includes novel programs and new curricular approaches for advancing food defense education at the undergraduate, graduate, post-doctoral, professional, and community levels. Ongoing support for delivery of food defense programs of study is not included in this aim.

REQUIRED PROPOSAL ELEMENTS

Proposals for research efforts funded by NCFPD must include the following components, as outlined below.

PART I. PROJECT SUMMARY (Submit on Project Summary Form provided.)

A. Basic project information (title, PI, project dates, budget, timetable, etc.)

B. Timetable for Deliverables

Complete a timetable defining all key tasks, milestones/deliverables, and time allocated for attainment of objectives. Milestones refer to specific points in the project that demonstrate the project is making appropriate progress toward delivering against the specific research aims. Deliverables could include publications or other demonstrations of success or reasonable progress as well as tools, strategies and approaches deployed to end users.

C. Abstract

Provide a clear and concise summary (1-2 paragraphs, 400 word maximum) of the question investigated or problem addressed, methods used, potential outcomes of the project (how its results could be used to enhance food defense, particularly, capabilities for prevention, detection, response, or recovery in relation to intentional food contamination events) and specific end users.

PART II. NARRATIVE (Not to exceed 5 pages; 12-point font; single spaced, 1" margins)

A. Introduction and Highlights

- 1) Describe the problem or unmet need in relation to protection and defense against potential food contamination incidents with "catastrophic" public health or economic impact ("catastrophic" impact generally defined as affecting 1,000-10,000 people or causing more than \$10 billion in damages)

Explain the project's significance in addressing current unmet needs, including:

- i. how the project differs from previous efforts or existing research
- ii. aspects of the project that are novel, unique, and/or innovative
- iii. development of new capabilities

- 2) State clearly and concisely the project's overall objectives and specific goals
- 3) Explain why NCFPD is the preferred funding mechanism or why the project cannot be funded through other sources

B. Methodology

- 1) Describe the project's research design and methods to be used to meet the stated objectives
- 2) Show how knowledge gained from model systems is being transferred to food protection and defense (if applicable)
- 3) Identify key challenges to the project's success (e.g., select agents approval, access to companies' proprietary data) and plans for addressing those issues
- 4) Identify areas for collaboration with existing projects within NCFPD and other DHS Centers of Excellence
- 5) Describe plans for integrating multi-institutional collaborators into the project's management, approach, analysis of results, and/or dissemination of results (if applicable)

C. Project Output and Outcome

- 1) Describe anticipated results (output) that demonstrate successful achievement of the research aims, both in terms of long-term benefits to food defense, as well as possible immediate steps that can be taken.
- 2) Identify intended or potential stakeholders and end-users (e.g., specific federal or state regulatory agencies, the food industry).
Describe anticipated outcomes (intended impact on potential stakeholders and end-users) of the project.
- 3) Identify potential dual benefits, if any (e.g., application to food safety issues, preparedness for natural disasters, resiliency to disruption of the food system due to H1N1 pandemic)
- 4) Describe any technology transfer applications, if applicable, and strategies for commercialization of new technologies.
- 5) Outline plans for dissemination of results.

PART III. APPENDICES (May be included at end of Narrative or attached separately.)

- A. Describe the relevant expertise and qualifications of the investigator team. (Required for new Principal Investigators only.)
- B. Attach PI and co-PI biosketch using NIH template (4-page maximum). For template and content instructions see: <http://grants.nih.gov/grants/funding/phs398/phs398.html>
- C. Outline facilities and equipment, if applicable, to be used for this research. (If proposal involves a current project, only provide this information if new facilities or equipment was acquired since previous proposal.)
- D. Provide a copy of the latest rate agreement negotiated with a cognizant Federal agency. (IDC rate).

PART IV. PROPOSED BUDGET (Submit on Proposed Budget Excel sheet provided.)

A. Personnel

- 1) Identify project director/principal investigator, investigators, students and staff.
- 2) Do NOT include consultants or contracted services in this section

B. Travel

- 1) Travel is limited to project personnel and students receiving support under this project.
- 2) Do NOT include sub-contractor or consultant travel in this section.+
- 3) Travel justification should include destination and purpose of trip. You may also use a descriptive placeholder, e.g. "scientific meeting," if meeting has not been identified at this time.
- 4) All foreign travel requires pre-approval by DHS at least 60 days prior to departure.
- 5) PIs from Agents, Event Modeling and System Strategies should include travel budget to attend Theme Meeting in Minneapolis in Oct-Dec, 2009 (TBD). If you plan to invite other investigators or students to this meeting, budget accordingly and include names of participants on budget justification. Typically, meetings begin at 1:00pm on Day 1 and adjourn by 2:00pm on Day 2.

- 6) Include travel costs to attend NCFPD Center-wide Meeting to be held in spring 2010 in Minneapolis. Minimally, budget should include travel for PI. If you intend to bring additional investigators and/or students, budget accordingly and list in budget justification. Do NOT include lodging in this request. (Lodging costs will be billed directly to NCFPD.)

C. Equipment

Budget justification should include a description of the equipment and plan for use on the project.

D. Supplies

If not identified on budget form, describe the types of supplies on justification attachment.

E. Consultants/Professional Services

Include description of services or scope of work on budget justification attachment.

F. Subcontracts

Include description of services or scope of work on budget justification attachment.

G. Other Direct Costs

If not identified on budget form, include a description on justification attachment.

H. Indirect Costs

Provide a copy of the latest rate agreement negotiated with a cognizant Federal agency in the appendices section (IDC rate).

PART V. BUDGET JUSTIFICATION

Attach a budget justification page providing requested detail as noted in Part III. Proposed Budget above.

For additional assistance concerning budget or justification, contact Ann Cary, NCFPD Finance Manager, rober0887@umn.edu, 612-624-2496.

SUBMISSION GUIDELINES

Preliminary submission of the Project Summary form (including abstract) for review and feedback is optional, but strongly encouraged for new projects. Preliminary submission is due **Monday, July 13**. Feedback will be provided by July 20.

Full proposals are due **Friday, July 31, 2009** via email to ncfpd@umn.edu. Proposals must include the following components:

- I. Project Summary including abstract (Use Project Summary form provided.)
- II. Narrative (5 page maximum, single space, 1" margin)
- III. Appendices (May be included at end of Narrative section or attached separately.)
- IV. Budget (Use Proposed Budget Excel sheet provided.)
- V. Budget Justification (Attach separately.)

Please direct questions concerning proposal submissions to Lisa Brienzo, NCFPD Senior Project Manager, 612-624-2614, brien002@umn.edu. For budget-related questions, contact Ann Cary, NCFPD Finance Manager, 612-624-2496, rober087@umn.edu.

2009/10 SUPPLEMENTAL FUNDING - KEY DATES

F, June 26, 2009	RFP issued
M, July 13, 2009	Project Summary (including abstract) due for preliminary review (optional, recommended for new projects)
M, July 20, 2009	Preliminary review/feedback on abstract provided
F, July 31, 2009	Full proposal due
T, Sept. 1, 2009	Award notifications issued (projected date)
Th, Oct 1, 2009	2009/10 SUPPLEMENTAL FUNDING PERIOD BEGINS
F, Jan. 29, 2010	Online Project Update #1 due
M, May 31, 2010	Online Project Update #2 due
Th, Sept. 30, 2010	2009/10 SUPPLEMENTAL FUNDING PERIOD ENDS
F, Oct. 29, 2010	Final Report due