GRANTS PROGRAM: CENTER FOR PRODUCE SAFETY
2012 Request for Proposals

Public Partners:
California Department of Food and Agriculture – Specialty Crop Block Grant Program (CDFA-SCBGP)
Washington State Department of Agriculture – Specialty Crop Block Grant Program (WSDA-SCBGP)

Commodity Organizations:
California Cantaloupe Advisory Board
California Leafy Greens Research Program
California Melon Research Board
California Pistachio Research Board
California Walnut Commission
Washington Tree Fruit Research Commission

RFP Deadlines: Proposals must be uploaded on the CPS Grants website no later than 5:00 p.m. (Pacific) on Friday, March 30, 2012. Three hard copies of the proposal must be delivered to CPS no later than 3:00 p.m. (Pacific) on Monday, April 2, 2012.

Project Period: One-year and two-year proposals will be accepted.

Total Funds Available: Up to $3,000,000

The Center for Produce Safety provides ready-to-use science-based solutions that prevent or minimize produce safety vulnerabilities.

OBJECTIVE

Research activities sponsored by the Center for Produce Safety (CPS) and partner entities are to be directed to answering critical research questions that fill the gaps in our basic understanding in specific areas of food safety practices for fruit, vegetable, and tree nut production, harvest and post-harvest handling. The objective is to provide the produce industry with practical, translatable research data that can be used at all levels throughout the supply chain.

GENERAL RESEARCH GUIDANCE

Consumption of fresh fruits and vegetables is a key element in the health and nutrition of people worldwide. The variety of products and year-round availability has opened up many exciting new ways for consumers to enjoy fruits, nuts and vegetables as never before. Multiple consumer studies have shown that consumption is steadily increasing as consumers have adopted healthier life styles and taken advantage of new fruit, nut and vegetable products that offer year round convenience, unique flavor combinations and nutritional balance. But along with this trend, the produce industry has faced numerous incidents over the last few years where outbreaks of foodborne illness have been traced to the consumption of fruits, nuts and vegetables. The produce industry has attempted to meet these food safety challenges with the development of commodity-specific food safety programs centered on Good Agricultural Practices (GAPs) at the raw or commodity finished product level and fully integrated processing food safety approaches anchored by HACCP-based programs for packaged products. As food safety guidance documents and standards for an array of commodities have evolved to become more measureable, industry scientists have struggled with a deficit of specific scientific knowledge on which to base metrics. This has been further exacerbated by the ever increasing demand from multiple buying groups to have producers meet various microbial specifications for water, soil, raw and finished products, as well as food safety metrics that exceed industry standards without any real science-based direction.

RESEARCH PRIORITIES

Research Priorities are on pages 3-6 of this document.

PROJECT FUNDING

CPS has joined with partner organizations to sponsor research in specific areas. CPS will administer this RFP for the funding partners. After the review of all proposals, awards will be assigned by CPS to one or more funding source.

GRANT LIMITS

Research awards may not exceed $200,000 in total costs per year. Research project term may not exceed two years.

CPS will consider proposals where the primary objective is to generate preliminary data or provide proof of concept for novel ideas. These proposals should address a question in the Research Priorities. Proof of concept awards may not exceed $50,000 in total costs, and may not exceed one year in length.

RESEARCH PROJECT TERM

January 1, 2013 through December 31, 2013 for one-year research projects.
January 1, 2013 through December 31, 2014 for two-year research projects.
January 1, 2013 through December 31, 2013 for proof of concept projects.

ELIGIBILITY

Projects should benefit the specialty crop industry and/or the public rather than a single organization, institution, individual, or commercial product. Funds will not be awarded for projects that directly benefit or provide a profit to a single organization, institution, or individual.

The following pertains to Specialty Crop Block Grant Program (SCBGP) funds that will be distributed through this program:

- To be eligible for a grant, the project must enhance the competitiveness of U.S. or U.S. territory grown specialty crops in either domestic or foreign markets. Specialty crops are defined as fruits, vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture). See the SCBGP-FB website (http://www.ams.usda.gov/AMSv1.0/scbgpdefinitions), for a list of eligible specialty crops and ineligible commodities.
- A recipient of funding from the 2012 Specialty Crop Block Grant Program must comply with the Federal Funding Accountability and Transparency Act of 2006 which will require obtaining a DUNS Number and maintaining a current registration in the Central Contractor Registration database (CCR).
- CDFA-SCBGP is seeking proposals from eligible non-profit organizations, for-profit organizations, local, state and federal government entities, including tribal governments, and public and private colleges and universities for projects that solely benefit the production of and access to California specialty crops.
- WSDA-SCBGP is seeking proposals from non-profit organizations, for-profit organizations, local, state and federal government entities, and educational institutions for projects that aim to enhance the competitiveness of Washington's specialty crops.
- Those entities that are non-profit or for profit, if awarded a grant, will be required to provide either verification of their non-profit status or a copy of a valid business license.

GRANTS PROGRAM: CENTER FOR PRODUCE SAFETY
2012 RFP Research Priorities

Section 1. Core Food Safety Research Needs. These research areas have been identified by review of previously funded CPS grants and research outcomes, feedback from participants at CPS research meetings, and through discussions with industry stakeholders. They were reviewed and revised by the CPS Technical Committee for this RFP. The core research needs cut across all fresh fruit, vegetables and nuts, including their production and process environments as we endeavor to better *understand risk potentials* and *develop more effective food safety management tools*. The descriptions are purposely broad.

1.1 Compost, Soil Amendment Fertilizer Use and Cultivation Practices. Produce growers use an array of organic nitrogen sources (e.g., cow, sheep, pig or chicken manure, fish emulsions, bird or bat guano, expended mushroom mulch, super-heated chicken pellets, green mulch, etc.) in both organic and conventional farming operations.

a) What is the influence of moisture, temperature profile, particle size, C:N ratio, bulking agent addition, aeration, etc. on inactivation of foodborne pathogens?
b) Research on the survival of foodborne pathogens is usually limited to BSL2 or higher facilities. Selection of appropriate surrogate organisms is complicated by the limited scientific data that validates their use. What phenotypic traits are most important for validating the use of nonpathogenic surrogates appropriate to mimic *E. coli* O157:H7 and non-O157:H7 shiga toxin-producing *E. coli* (STECs), *Salmonella* and *Listeria monocytogenes* in evaluation of manure, composts and soil amendments in BSL1 environments?
c) What factors (e.g., pathogen, crop, region, season, source, or amendment treatment) are the most important to consider to determine proper time intervals between application of various fertilizers and soil amendments and planting or harvesting?
d) How long can pathogens that might survive composting or re-infect composted materials or soil amendments survive when added to various soils and what factors may stimulate growth, e.g., temperature, nutrients, cultivation practices or moisture?
e) If raw manure is applied as a soil amendment, or if animals are allowed to graze in fields or orchards, how long will microorganisms of human health significance persist in the agricultural environment and pose a contamination risk? What factors influence this persistence?

1.2 *Buffer Zones from Domestic Animals to Fruit and Vegetable Production.* Domesticated animals are recognized as a potential reservoir or source of foodborne pathogens that can directly or indirectly result in contamination of fruits and vegetables. “Buffer” zones between domesticated animal operations (dairy, feedlot and grazing lands) and crop production are often set without adequate data to help define appropriate distances for diverse situations. This task is made difficult by a lack of knowledge regarding the movement of pathogens by wind or air currents, insects, runoff water, birds or other potential vectors.

a) Can foodborne pathogens be transferred from animal operations to fruit or vegetable crops by the wind, insects, and wildlife?
b) What factors influence the efficiency of this transfer and can they be controlled?

1.3 Co-management of Food Safety and the Environment. The intersection of on-farm management of food safety priorities and the impact of those management strategies on the environment has emerged as a critical area for growers.

a) Vegetative strips and riparian areas next to crop production may provide habitat for wildlife which may then move into the production area. Can foodborne pathogens be transferred by wild animals, birds, or insects from riparian areas or vegetative strips? What factors influence the efficiency of this transfer and can they be controlled?
b) Do riparian areas or vegetative strips impact the movement of foodborne pathogens from the environment to crop production areas? Do areas where vegetation borders crop production (e.g., riparian areas, vegetation around fields or irrigation ponds) impact movement of foodborne pathogens?
c) Wild birds, animals, and insects may carry foodborne pathogens. What controllable or measurable factors impact the risk for contamination of fruits and vegetables by the potential pathogen vectors? What best practices at the farm level might be employed to control these potential vectors?
d) In recent years some growers have discontinued the use of on-farm irrigation reservoirs or adopted a strategy of clearing vegetation and removing amphibians from those reservoirs. What management practices can be used to decrease potential risks from pathogens in on-farm reservoirs? Are biodiversity strategies available to help reduce the potential for irrigation pond contamination?

1.4 Agricultural Water. Growers use a variety of water sources for field operations and irrigation (e.g., wells, on-farm reservoirs supplied by wells, municipal reservoirs, canals, natural ponds, water reclamation projects, lakes, rivers and springs). Water sources are often chosen based on availability and sometimes by local water districts or boards.

a) Research on the survival of foodborne pathogens is usually limited to BSL2 or higher facilities. Selection of appropriate surrogate organisms is complicated by the limited scientific data that validates their use. What phenotypic traits are most important for validating the use of nonpathogenic surrogates that would mimic survival of STECs, *Salmonella* and *L. monocytogenes* on preharvest plants (greenhouse, field trials) contaminated by a water source?
b) If contaminated irrigation water is applied to crops, how long will human pathogens (e.g., *Salmonella*, STECs or *L. monocytogenes*) persist on the edible portion of the crop? What factors enhance or diminish survival?
c) What mitigation step(s) can be applied to various agricultural water sources that would diminish the risk of pathogen contamination to the crop?

1.5 ***Climate, Environment, Production Practices.*** The agricultural production environment may influence the survival of human pathogens.

a) Significant rainfall events have been documented to increase the detection of pathogens in raw commodities. Can rainfall events stimulate environmental growth or recovery of foodborne pathogens and increase the potential for detection? Does rainfall facilitate transference of pathogens to fruit, vegetable or nut surfaces?
b) How do different cultivation practices (e.g., soil preparation (pre-plant and postharvest) and crop rotation) impact the fate of foodborne pathogens and/or indicator organisms in various soils and crops?
c) How significant is the risk of transfer of foodborne pathogens from soil to crops grown above the ground (e.g., tree fruits or other crops cultivated on poles, trellises).

d) How is the physiological state of *Salmonella,* STECs, and *L. monocytogenes* on fruits or vegetables impacted by the pre-harvest environment? What factors impact that state? Does the physiological status of these pathogens impact their ability to cause disease if consumed?

***1.6 Harvest and Cooling Practices*.** Growers, harvesters and cooling facility operators have adopted a number of practices to improve the safety of fruit and vegetable products.

a) What is the significance of time from harvest to cooling on pathogen survival or growth?
b) What factors impact the potential for contamination (increased prevalence or numbers) from postharvest cooling of the product? What strategies could be employed to reduce that risk?
c) What role do biofilms play in the survival and persistence of pathogens on harvest or cooling equipment? How can the risk presented by biofilms be reduced?
d) What are the potential cross contamination risks posed by forced air, hydrovacuum, vacuum or other cooling mechanisms and what measures might be used to manage these potential risks?

1.7 Pathogen Transfer from Water during Postharvest Handling and Processing. It is important to gain a better understanding of water quality, validation of sanitation systems and tools that might be used to improve pathogen control especially at the packinghouse.

a) Organic load can impact the efficacy of many wash water sanitizers. What tools are available to reliably monitor organic load and how might these be used to give operators better control over wash water sanitation?
b) Historically, wash water sanitation systems have been developed to prevent cross contamination as the water is used to clean debris from fruits or vegetables. Recent innovations have focused on improving wash water sanitation and perhaps permitting 2-3 log reductions of microorganisms from the surface of fruits and vegetables. Are there additional tools or technologies that might reliably permit even greater reduction of surface microorganisms on fruits and vegetables?
c) What variables, e.g., sanitizer concentration, pH, residence time, turbidity, etc. need to be measured to validate the efficacy of and monitor the performance of the operation of wash water or flume water microbial control systems?
d) Research on the survival of foodborne pathogens is usually limited to BSL2 or higher facilities. Selection of appropriate surrogate organisms is complicated by the limited scientific data that validates their use. What phenotypic traits are most important for validating the use of nonpathogenic surrogates that would mimic survival of STECs, *Salmonella* and *L. monocytogenes* in wash water validation studies conducted in commercial facilities? What other factors are important to their safe use?
e) What is the prevalence of *Listeria* in packinghouse environments? What facility design characteristics and product handling practices may increase or decrease the risk of *L. monocytogenes* contamination of fresh produce?

1.8 Pathogen Survival in the Postharvest Distribution Chain*. In products where routine raw product pathogen testing is practiced, e.g., leafy greens, growers find only very low frequencies of positive test results (<0.01%).* In contrast, 10 to 100-fold higher positive frequencies have been reported by USDA and FDA for tests of targeted commodities and processed products collected from the marketplace.

a) What factors across the supply and distribution chain contribute to this apparent increase in pathogen detection from field through distribution (e.g., recovery of injured cells, growth, differences in sampling strategies, process cross contamination or detection methods)?

b) What factors contribute to the survival and multiplication of foodborne pathogens in specific whole commodities and packaged, processed products under standard storage, shipping and retail conditions?
c) Are there practices in commercial distribution that would provide a barrier to pathogen growth?
d) What tools might be used by foodservice operators to manage cross contamination risks in their operations and how might these be validated for efficacy and monitored when in use?

Section 2 - Partners in Research – CPS partners with various commodity groups and organizations to help identify and fund research programs to improve our understanding of specific food safety issues for targeted commodities.

2.1 The Washington Tree Fruit Research Commission and the fruit industry in the Pacific Northwest are interested in a research program to investigate the risk of pathogen contamination on fresh market apples.

a) How does water quality influence the specific risks of contamination of tree fruit and survival of pathogens on fruit surfaces when water is applied preharvest (e.g., overhead irrigation, evaporative cooling, pesticide application) or post-harvest (e.g., evaporative or hydro cooling, in drench tanks and flumes)?
b) What is the quantitative risk of microbial contamination for pear, cherry and stone fruit production and handling?
c) How do bin-handling practices (including bin sanitation) influence microbial contamination of tree fruit?

2.2 The California Cantaloupe Advisory Board and the ***California Melon Research Board*** are interested in research programs that investigate the following aspects of fruit production:

a) Quantitative risk assessment can be used to identify control points for prioritization in risk management and to highlight critical research needs. What is the prevalence of *Listeria monocytogenes* and *Salmonella* spp. in various cantaloupe production and distribution environments and how might these and other data be used to conduct a quantitative risk assessment for this commodity?
b) What role do biofilms play in contamination of cantaloupes in packing operations and how might biofilm formation be controlled most effectively in these settings?
c) Cantaloupe wash water sanitation and subsequent cantaloupe cooling have been identified as potential risk factors for this crop. What postharvest pathogen reduction protocols might be used to reduce surface microbes in cantaloupes? How would these interventions be validated? What would be the quality and cost impacts if these interventions were employed?

2.3 The California Pistachio Research Board and the ***California Walnut Commission*** are interested in research focused on assessing the food safety risks in the tree nut production environment.

a) What are sources of *Salmonella* and *E. coli* O157:H7 in the pistachio and walnut production environment?
b) Is water used for irrigation or application of agricultural chemical sprays a risk for contamination in these crops?
c) Do dusts generated by farming practices contribute to contamination?
d) Are there concrete and quantifiable risk reduction strategies that could be implemented by modifying production practices?

PROPOSAL REVIEW

Proposals will be reviewed by at least three experts drawn from the CPS Technical Committee, ad hoc reviewers and Partners in Research, as appropriate. The reviewers will use the following as a guideline for their evaluation of the proposal:

Section (*all sections are required*)	
Cover Sheet	*
Title Page	*
Layperson's Summary of Proposal	*
Proposal (A-H, 10 page maximum)	
A. Technical Abstract	4
B. Background	2
C. Identification of Target Research Questions	1
D. Hypothesis	7
E. Research Objectives	10
F. Experimental Plan and Methods	30
G. Expected Results and Impact on the Produce Industry	15
H. Potential Pitfalls to Accomplishing Objectives	2
Proposal - Additional Information (I-P, no page limit)	
I. Program Work Plan/Timeline	5
J. Facilities and Equipment Available for the Research	5
K. PI, Co-PIs, Academic and Industry Cooperators and Their Roles	4
L. Explanation of Related Research Funding	2
M. Previous SCBGP Funding and/or Submission to Federal or State Grant Programs	*
N. Project Oversight	*
O. Performance Monitoring Plan	*
P. Literature Cited/Bibliography	*
Additional Required Documents (no page limit)	
Budget Summary and Justification	7
Current and Pending Support for PI and Co-PIs	3
Biographical sketch for PI and Co-PIs	3
Letters of Support from Industry Cooperators	*
Abbreviation and Acronym Key	*
Resubmission Form (if applicable)	*

* All sections are required for a complete proposal package. Some sections have no numerical value assigned, but all sections are read and included in the reviewer's evaluation of the proposal.

PROPOSAL FORMAT

For the title page, layperson's summary and Sections A-P use a sans serif font (Arial or Calibri preferred) no smaller than 11 point. Use 1 inch margins on all sides and single line spacing. Number pages for Sections A-P at the bottom. The body of the proposal (Sections A through H) may not exceed 10 pages. The title page, layperson's summary, and Sections I through P *are not* included in the 10-page limit. The additional required documents (budget summary and justification, current and pending support, biographical sketches, letters of support, abbreviation and acronym key, resubmission form) *are not* included in the 10-page limit. Required form templates for 2012 proposals must be downloaded from the CPS Grants Website, https://ucanr.org/cpsgrants/. Instructions for downloading these forms are in Appendix A. The forms were created with MS Office 2010. If you have an earlier version of MS Office you may need to "save as" and select your version. Follow the format, style and guidelines described here and on the sample proposal in Appendix B.

Cover Sheet

- Use the 2012 form provided on the CPS Grant System website (https://ucanr.org/cpsgrants).
- Complete all sections of the cover sheet.
- The cover sheet must be signed by the Principal Investigator, all Co-PIs, and by an official authorized to sign for their institutions. Signatures and institutional approval for the PI and Co-PIs may appear on separate copies of the cover sheet.
    - The *Principal Investigator* (PI) is that person whose name appears first on the title page of the proposal. The PI is mutually agreed upon by the cooperating scientists and is responsible for the submission of scientific reports, administration of the grant, notification of changes in the work plan or budget, and maintaining contact with CPS. The affiliated institution of the PI becomes the *principal institution* and signs the research agreement.
    - *Co-principal Investigators* (Co-PIs) are those persons whose names appear after the PI on the title page of the proposal. Co-PIs are individuals who are involved with the PI in the scientific development or execution of a project. The Co-PIs may be affiliated with the PI's organization or another organization participating in the project.
    - *Cooperators* are other investigators listed on the title page who are neither the PI nor a Co-PI.
- Proposals from USDA Agricultural Research Service scientists should have approval through the agency's "ARIS, Incoming Agreements" process for CPS budget requirements and indirect cost restrictions.

Title Page

- Project title: Provide a clear, concise title that describes the project. Capitalize only the first word and proper nouns.
- Principal Investigator: Name, institutional affiliation, mailing address, phone number, and email address.
- Co-PIs: Name, institutional affiliation, mailing address, phone number, and email address.
- Cooperators: Name, institutional affiliation, mailing address, phone number, and e-mail address.

Layperson's Summary of Proposal

- Summarize your proposal in non-technical language suitable for dissemination to the public.
- Provide a description of the project, objectives and methods to be employed.
- Do not exceed 200 words.

<u>Proposal Proper</u> (Sections A-H, 10 page maximum)

A. Technical Abstract
- The technical abstract should offer a concise summation of the proposal to the reviewers.
- It should conclude with a clear impact statement derived from the anticipated outcomes.
- Do not exceed 500 words.

B. Background
- Write a concise statement of the project purpose – the specific issue, problem, or research need to be addressed.
- Explain why this project is important and timely.

C. Identification of Target Research Questions
- Identify one or more of the 2012 Research Priorities the project addresses.
- Research Priorities are listed on pages 3-6.

D. Hypothesis
- Clearly state the hypothesis-driven approach that conveys the rational and biological or technological foundation for the proposed research.

E. Research Objectives
- Logically arrange the objectives.

F. Experimental Plan and Methods
- For each objective discuss the procedures you propose to employ.
- Be specific enough to discuss relevant biological strains, experimental design or parameters of data collection, sampling and sample analysis protocols, and anticipated statistical analysis.
- Emphasize quantifiable and measurable outcomes.

G. Expected Results and Impact on the Produce Industry
- Describe your previous or current work directly related to the objectives and the results that have been generated to date.
- For the proposed work describe the anticipated benefits to near-term food safety solutions for the produce industry.
- Address how this project will guide more specific and effective risk management practices for the industry.
- Name the beneficiaries of the project; how they will be impacted; and the approximate number of beneficiaries that will be impacted.
- Include at least one distinct, quantifiable and measurable outcome that directly and meaningfully supports the project's purpose and is of direct importance to the intended beneficiaries. The expected measurable outcome should include:
  - Goal
  - Performance measure
  - Benchmark
  - Target

H. Potential Pitfalls to Accomplishing Objectives
- Describe the pitfalls that may be anticipated and your strategies for overcoming these pitfalls.

<u>Proposal– Additional Required Information</u> (Sections I through P, no page limit)

I. Project Work Plan/Timeline
- Using a table format prepare a Work Plan that clearly delineates the activities and timeframe anticipated to achieve each objective within the term of the project.
- Include a 3-column table with the following headings and information:
  - *Project Activity* – activities necessary to accomplish the project objectives.

- *Performed by* - personnel involved in each activity.
- *Timeline* - month and year in which you estimate the activities will start *and* end.

- Include required reports in the work plan.
  - Bi-annual progress reports - March 31 and September 30
  - Final report - 30 days after end of research term
- Include presentation of research progress and/or final results at the CPS Produce Research Symposium.
  - For one-year projects, present final results at the June 2014 symposium.
  - For two-year projects, present research progress at the June 2014 symposium and final results at the June 2015 symposium.
- **Y**our data collection plan should be integrated into the project timeline.
- If subcontractors or collaborative arrangements are used in your project, include their activities in your work plan/timeline.

J. Facilities and Equipment Available for Research

- Briefly describe the facilities and equipment available to you to achieve the proposed objectives.

K. PI, Co-PIs, Academic and Industry Cooperators and Their Roles

- Specify the role of project personnel (PI, Co-PI, cooperators, support staff) in achieving the project objectives.
- Include their title and percent of full time equivalent (FTE) devoted to this project.

L. Explanation of Related Research Funding

- Identify current or pending research funding that has relevance or overlap with the proposed research (see Section M also).
- Briefly discuss how the objectives for this proposal are unique or supplement current or pending research.

M. Previous SCBGP Funding and/or Submission to Federal or State Grant Programs

- If the project *builds on* a previously funded SCBGP project:
  - Describe how the project complements ***and*** differs from the previously funded project. Provide a summary (three to five sentences per project) of the results of the completed work, the long-term quantifiable effects of the results, especially as they impact the specialty crop industry, and how this project will supplement or build on previous funding from the SCBGP.
- If the project does not build on a previous SCBGP project, state that it does not.
- State whether the project has been submitted to or funded by another federal or state grant program and describe how the project supplements the efforts and does not duplicate funding efforts.
- If the project has not been submitted to or funded by another federal or state grant program, state that it has not.

N. Project Oversight

- Describe the oversight practices that provide sufficient knowledge of all grant activities to ensure proper and efficient administration.
- Address the following:
  - Identify the PI and Co-PIs who will oversee the project activities.
  - How the oversight will be performed.
  - Include time frame for oversight practices.

O. Performance Monitoring Plan

- This plan describes the process of collecting and analyzing data to meet the outcome-oriented objectives. Address the following:
  - Who will collect the data.

- How and where the data will be collected.
- If using a survey, provide information on the nature of the questions that will be asked, the methodology to be used, and the population to be surveyed.
- Outline how data gathered will be used to correct deficiencies and improve performance.
- If applicable, indicate how monitoring will occur after the grant period ends without continued funding.

P. Literature Cited/Bibliography

Additional Required Documents (no page limit)

- **Budget Summary and Budget Justification**
  - Use the 2012 form provided on the CPS Grant System website (https://ucanr.org/cpsgrants).
  - Requirements and restrictions for the Budget Summary and Budget Justification are found on pages 12-14.
- **Current and Pending Support for PI and Co-PIs**
  - Use the 2012 form provided on the CPS Grant System website (https://ucanr.org/cpsgrants).
  - Include this proposal under pending support.
- **Biographical Sketch for PI and Co-PIs**
  - Use the 2012 form provided on the CPS Grant System website (https://ucanr.org/cpsgrants).
  - Maximum of 2 pages for each investigator.
  - Include only publications most relevant to this proposal.
- **Letters of Support from Industry Cooperators**
  - Include a signed letter of support for each industry cooperator specifying their role in the project objectives and any facility infrastructure or in-kind support they will provide**.**
  - The review of your proposal includes an evaluation of your industry cooperators. Letters of support from them are strongly recommended.
- **Abbreviation and Acronym Key**
  - Include a key for all abbreviations and acronyms used in your research proposal and budget justification.
- **Resubmission form**
  - Use the 2012 form provided on the CPS Grant System website (https://ucanr.org/cpsgrants).
  - If you have previously submitted a similar proposal to CPS, include the resubmission form with your proposal, indicating the year it was previously submitted, the title, and include a brief narrative describing what has been revised, added or deleted in your 2012 proposal. A "new" proposal is expected to be substantially different in content and scope. It should exhibit a significant change in direction and approach and include substantial changes in all sections of the research plan.

Optional Document

- **Suggested/Restricted Reviewers**
  - You may send a short list of suggested reviewers for consideration. Likewise, a short list of persons to whom the proposal should not be sent for review may be included.
  - List their names, titles, affiliations, addresses, email addresses, phone numbers and a brief justification for restricted reviewers.
  - Send this by email to Bonnie Fernandez-Fenaroli (bfernandez@cps.ucdavis.edu) no later than April 2, 2012.

BUDGET REQUIREMENTS AND RESTRICTIONS

Budget Summary and Justification

Use the 2012 form provided on the CPS Grant System website (https://ucanr.org/cpsgrants) and provide all requested information. Complete the 1-page budget summary for your project and provide budget details and justification on separate justification forms for Year 1 and Year 2. If you will be issuing a subaward or subcontract to another university or organization, include the total amount for that subaward in your budget under Contractual. The Co-PI receiving the subaward must complete a scope of work statement and separate budget summary and justification form that will be submitted with your proposal. A sample completed budget summary and justification is in Appendix B.

The Budget Summary and Justification templates are MS Excel 2010 spreadsheets. On the justification forms rows may be added to or deleted from budget categories as needed. Cells were merged to create this form, so "auto resize" will not work. You may need to manually resize row height to view all text if cells contain a large amount of text (e.g., salary, travel, supplies, etc.).

- **Personnel**
  - **Salary:** Funds may not be used for salary for the PI or Co-PI, even if they are only partially funded by their universities or organizations. The budget may include salary for support personnel proportional to the time devoted to the research project. For the PI and Co-PIs show their title, percent of full-time equivalent (FTE) for this project and zero salary. For each support staff member show their title, percent of full time equivalent (FTE) for this project, annual salary and the corresponding salary for the FTE.
  - **Fringe Benefits:** Funds may not be used for fringe benefits for the PI or Co-PI, even if they are only partially funded by their universities or organizations. The budget may include fringe benefits for support personnel proportional to the time devoted to the research project. For each support staff member show their title, salary requested for the project, fringe benefit rate (as a percentage of salary), and the corresponding benefits requested.
- **Travel**
  - Travel funds may be requested for field work, for meetings with Co-PIs or cooperators, for the PI to travel to present research progress at the CPS Produce Research Symposium, and for the PI and one Co-PI to travel to present final research results at the CPS Produce Research Symposium. If your project period is one year (January 2013-December 2013), request funds to present final research results at the June 2014 symposium in California in the Year 2 budget. If your project period is two years (January 2013-December 2014), request funds to present research progress at the June 2014 symposium in California in the Year 2 budget, and to present final research results at the June 2015 symposium in Florida, also in the Year 2 budget. Project periods are limited to one or two years, but awards will be written to allow use of travel funds for the CPS symposium in the June following completion of your research project.
  - In a brief narrative statement, provide the following information for each trip requested:
    - Total amount requested for trip
    - Origin & destination
    - Purpose of trip
    - Number of trips required for this purpose, if more than one during the year
    - Number and titles of people traveling
    - Number of days traveling/person
    - Estimated airfare costs/person
    - Estimated ground transportation costs/person
    - Estimated lodging costs/person

    - Estimated meal costs/person
    - Estimated mileage costs for use of a private vehicle (# miles * 55.5 cents/mile)
  - Travel funds *may not* be requested to attend or present research results at other professional meetings.
- **Equipment** *(single item purchase with a cost ≥ $5,000 and a useful life of more than one year)*
  - Funds for nonexpendable equipment will only be considered under special circumstances when the equipment is essential for completion of the proposed work. Detailed supporting information (including a justification and quotes) should be attached for any request for nonexpendable equipment.
  - If the cost is under $5,000, include under Supplies and Materials.
- **Supplies and Materials**
  - Funds are allowed for materials and expendable supplies needed to conduct your research.
  - Provide an itemized list of the materials and supplies, their purpose in your research, the estimated quantity and cost.
- **Contractual**
  - If you will be issuing a subaward or subcontract to another university, include the total amount for the subaward in your budget under Contractual.
  - The Co-PI receiving the subaward must complete a statement describing their work on your project and a separate budget summary and justification to be submitted with your proposal.
  - If you will be issuing a subcontract to a consultant or independent contractor, call Leslie Maulhardt for requirements and restrictions on these services.
- **Other Costs**
  - Provide an itemized list describing other costs, their purpose in your research, the estimated quantity and cost.
  - Appropriate other costs include:
    - Rental of special purpose equipment required to complete your research.
    - The cost of outreach materials, shipping and handling if the project includes an outreach component.
    - Costs of preparing and publishing the results of your project, including reprints, page charges and illustrations.
    - Stipends to participants in field studies.
    - Costs of computer-based retrieval of scientific and technical information may be requested if such services are required for completion of the project objectives and it is the normal policy of the recipient institution to charge for the use of such facilities.
- **Indirect Costs**
  - For this RFP, prepare all proposal budgets using a rate of 5% of personnel costs.
  - See information below regarding restrictions on allowable costs.
- **Program Income**
  - Indicate if your project will generate program income. If yes, provide a brief description.

Budget Restrictions

Please note that some sponsors have restrictions on allowable costs. If an awarded project is selected for funding by one of the sponsors with specified restrictions, PIs will be required to modify their budget summary and budget justifications accordingly. During the proposal stage, a budget summary and justification should be prepared with the assumption that all costs will be allowable.

- **Indirect costs**: Prepare all proposal budgets using an indirect cost rate of 5% of total Personnel (salaries/wages + fringe benefits). However, based on specific funding entities' requirements

indirect costs may be restricted or not allowed. Once the funding source for an award is assigned by CPS, we will request the budget summary and justification be revised to reflect the sponsor's indirect cost rate restrictions:

- For awards funded by CDFA-SCBGP indirect costs may not exceed five percent (5%) of total personnel services (salaries and wages plus fringe benefits).
- For awards funded by the CPS Campaign for Research indirect costs may not exceed five percent (5%) of total personnel services (salaries and wages plus fringe benefits).
- For awards funded by WSDA-SCBGP indirect costs are not allowed.
- For awards funded by commissions and boards under the agreement between the California Marketing Program and The Regents of the University of California indirect costs are not allowed.
- Costs that are a part of the institution's indirect cost pool (e.g., administrative or clerical salaries) may not be reclassified as direct costs for the purpose of making them allowable.

- Capital Expenditures: Award funds cannot be used for the renovation or refurbishment of research spaces; the purchase or installation of fixed equipment in such spaces; or for the planning, repair, rehabilitation, acquisition, or construction of a building or facility

All budgets must be approved by CPS and the corresponding funding agency. The budget summary and justification must contain sufficient detail and be approved by the funding agency prior to execution of an award. Budget revisions requested must be submitted in a timely manner or funding may be delayed or rejected.

PROPOSAL SUBMISSION

- **Upload the complete proposal** as a single PDF document in the order specified below to the CPS Grant System, https://ucanr.org/cpsgrants, no later than 5:00 p.m. (Pacific) on Friday, March 30, 2012.
    1. Log in to your account. From the Main Page screen, select My Proposal
    2. Confirm the information in 1. General Information and 2. Grant Administration is correct
    3. Select Add a Document from 4. Proposal Documents
    4. Select Proposal Document in File Type
    5. Name your proposal
    6. Browse to find the PDF proposal file on your computer
    7. Select Upload Document
- **Upload the title page, layperson's summary and technical abstract** as a single MS Word document to the CPS Grant System, https://ucanr.org/cpsgrants, no later than 5:00 p.m. (Pacific) on Friday, March 30, 2012.
    1. Follow 1-3 above
    2. Select Other Document in File Type
    3. Name your title page/summary/abstract document
    4. Browse to find the MS Word file on your computer
    5. Select Upload Document
- **Select Submit Proposal**
- **Send 3 one-sided hard copies of the uploaded proposal to CPS** in the order specified below. Hard copies must be delivered no later than 3:00 p.m. (Pacific) on Monday, April 2, 2012 to:

  Bonnie Fernandez-Fenaroli
  Center for Produce Safety
  1477 Drew Avenue, Suite 101, Davis, CA 95618
  (530) 757-5777

  Fasten hard copies with binder clips or paper clips - do not staple.
- **Proposal documents must be submitted in this order**:
    - Cover sheet(s)
    - Title page
    - Layperson's summary
    - Sections A-H (10 page limit)
    - Sections I-P
    - Budget Summary and Justification for PI
    - Budget Summary and Justification for subaward/subcontract (if applicable)
    - Current and pending support form for PI and Co-PIs
    - Biographical sketch forms for PI and Co-PIs
    - Letters of support from industry cooperators
    - Abbreviation and acronym key
    - Resubmission form (if applicable)
- **Optional document**
    - You may submit a short list of suggested or restricted reviewers for consideration. Provide names, titles, affiliations, email addresses, phone numbers, and a brief justification for restricted reviewers. Send by email to Bonnie Fernandez-Fenaroli (bfernandez@cps.ucdavis.edu) by March 30, 2012. ***Do not*** **include this document in the proposal you upload to the CPS Grant System website or in the hard copies you ship to CPS.**

EVALUATION

Proposals will be evaluated by a review panel of at least three experts drawn from the CPS Technical Committee and/or ad hoc reviewers, as appropriate. Once the solicitation and award process is complete, CPS will provide feedback to all PIs who were not selected for funding under the 2012 RFP.

AWARD NOTIFICATION

The CPS executive director will notify successful applicants after a peer review of all proposals and approval of projects by specific funding entities. The announcement of awards is expected in October-November 2012, pending commitment of USDA funds to the 2012 Specialty Crop Block Grant Program. PIs awarded grants may be asked for additional information.

REPORTING REQUIREMENTS

- Progress reports (~2 pages) will be submitted to CPS by email. The format will be provided by CPS. These will be due on March 31 and September 30.
- Final reports (~5-15 pages) will be submitted to CPS by email. These will be due 30 days after end of the research project term. The format will be provided by CPS.
- Funding entities may have additional reporting requirements.
  - Specialty Crop Block Grant Funds grant recipients will be required to complete a Final Performance Report. The report form, limited to 5 pages, will be provided by CPS.
- All research results reported in the progress and final reports will be public information and posted on the CPS website.
- Produce Research Symposium
  - All PIs funded by the Center for Produce Safety are required to participate in the annual CPS Produce Research Symposium and present results of their research.
  - For a one-year project you will prepare a poster to send to the CPS Produce Research Symposium in June 2013. You will present your final research findings at the CPS Produce Research Symposium in June 2014.
  - For a two-year project, you will prepare a poster to send to the CPS Produce Research Symposium in June 2013. You will present your research progress for Year 1 at the CPS Produce Research Symposium in June 2014 and present your final research findings for Years 1 and 2 at the CPS Produce Research Symposium in June 2015.
- Written progress and final reports of results will appear in the proceedings of the symposium and will be posted on the CPS website.
- The CPS Technical Committee and Advisory Board are studying the possibility of publishing research presented at the symposium as a collection of peer-reviewed articles in a scientific journal devoted to food safety.
- All publications must acknowledge CPS and the specific funding agency; grant funding will acknowledge both entities.

SUGGESTIONS FOR A SUCCESSFUL PROPOSAL

- A significant volume of literature exists in produce safety microbiology and related fields. The CPS Global Research Database (https://cps.ucdavis.edu/global_research_database.php) is a resource that can be used by PIs to review the current literature. Reports for previously-funded CPS research are also available online (https://cps.ucdavis.edu/grant_opportunities_awards.php) and these data may not yet be published. The PI should ensure that they have adequately reviewed the literature and that they describe how the proposed research will complement or expand on existing research.
- The produce industry is very dynamic and practices that were common five years ago may no longer be routinely practiced. In addition, practices for a given crop are often region specific. PIs are encouraged to reach out to the produce industry (independently or through CPS) as they are preparing their proposals to make sure the proposed research applies to regionally-appropriate and current practices.
- Review the Proposal Review guidelines to gain an understanding of how the reviewers will be asked to evaluate each proposal. This will give you a road map to areas of the proposal that are most important to the review and ranking process.
- The review process will focus on the scientific merit of the proposed research and the relevance of the proposal to the produce industry as described in the RFP research priorities and specific questions.
- It is not necessary for a proposal to address all aspects of a specific question in the RFP research priorities. These questions are guidelines as to what the industry has identified as priorities, but it is understood that they are broad in scope and may be beyond the reach of a single research proposal.
- The most common criticisms of reviewers are *vague*, *overly ambitious* or *unfocused*. Present clear objectives, well-founded hypotheses and work plans that address the stated objectives. Clearly address potential pitfalls or experimental dependencies and how the experimental plan will modulate the occurrence or impact on successful execution of the project plan.
- A key function of CPS is to fund research that can be used by growers, harvesters, shippers and processors to solve critical food safety problems, to provide new insights to optimization of processes, or to establish a novel directional basis for future research. Be sure your proposal aims to advance a near-term solution to a specific food safety problem.
- Careful formatting and proofreading are essential for professional evaluation of the proposal. In addition to the expectations for professional organizational style, spelling and grammar, give careful attention to budget and justification calculations, correct citations, and the quality of any imbedded images, figures, or graphs.

CPS CONTACT

Bonnie Fernandez-Fenaroli, Executive Director
Center for Produce Safety
1477 Drew Avenue, Suite 101
Davis, CA 95618
Phone (530) 757-5777 / Fax (530) 757-5717
Email: bfernandez@cps.ucdavis.edu

GRANTS PROGRAM: CENTER FOR PRODUCE SAFETY

APPENDIX A
2012 RFP Required Forms Download Instructions

Cover Sheet

Budget Summary and Justification(s)

Current and Pending Support

Biographical Sketch

Resubmission Form (if applicable)

The RFP guidance document and required form templates may be downloaded from the CPS Grant System website: https://ucanr.org/cpsgrants/index.cfm.

- The Request for Proposals (RFP) guidance document can be obtained by following the "View Current RFP" link under “Active Grants in System” on the Main Page.
- To download the required form templates you will need to create an account to access the CPS Grant System. Follow instructions on the Main Page of the CPS Grant System website:
  - *Please Note: You need an account to access this system. You can Create a New Account here or follow the link Never logged in? Create a new Account and follow the instructions to activate your account. If you're not sure whether your account already exists, try to create a new account and the system will tell you if one already exists.*
  - *You will enter your name and email, and will receive a “Welcome to the CPS Grant System” email from anrweb@ucdavis.edu. Follow the link to enter your profile information.*
- Once that is done, open a new proposal on the website.
  - *To open a new proposal, click on “Create new Proposal for This Grant.”*
- Once that is done you will see links to the required form templates and the RFP document on the right side of the screen.

GRANTS PROGRAM: CENTER FOR PRODUCE SAFETY
APPENDIX B
2012 RFP Sample Proposal

Your proposal should follow the style and guidelines described in the guidance document. When you are ready to submit your proposal:

- **Upload the complete proposal** as a single PDF document in the order specified below to the CPS Grant System, https://ucanr.org/cpsgrants, no later than 5:00 p.m. (Pacific) on Friday, March 30, 2012.
    1. Log in to your account. From the Main Page screen, select My Proposal
    2. Confirm the information in 1. General Information and 2. Grant Administration is correct
    3. Select Add a Document from the 4. Proposal Documents section
    4. Select Proposal Document in File Type
    5. Name your proposal
    6. Browse to find the PDF proposal file on your computer
    7. Select Upload Document
- **Upload the title page, layperson's summary and technical abstract** as a single MS Word document to the CPS Grant System, https://ucanr.org/cpsgrants, no later than 5:00 p.m. (Pacific) on Friday, March 30, 2012.
    1. See 1-3 above, then select Other Document in File Type
    2. Name your title page/summary/abstract document
    3. Browse to find the MS Word file on your computer
    4. Select Upload Document
- **Select Submit Proposal**
- **Send 3 one-sided hard copies of the complete proposal** in the order specified below (fasten copies with binder clips or paper clips - do not staple). Three hard copies of the proposal must be delivered to CPS no later than 3:00 p.m. (Pacific) on Monday, April 2, 2012:

    Bonnie Fernandez-Fenaroli, Executive Director
    Center for Produce Safety
    1477 Drew Avenue, Suite 101
    Davis, CA 95618
    (530) 757-5777
- Uploaded PDF proposal and hard copies must be exact duplicates.
- Proposal documents must be submitted in this order:
    - Cover sheet(s)
    - Title page
    - Layperson's summary
    - Sections A-H (10 page limit) and Sections I-P
    - Budget Summary and Justification for PI
    - Budget Summary and Justification for subaward/subcontract (if applicable)
    - Statement of scope of work for subaward/subcontract (if applicable)
    - Current and pending support forms for PI and Co-PIs
    - Biographical sketch forms for PI and Co-PIs
    - Letters of support from industry cooperators
    - Abbreviation and acronym key
    - Resubmission form (if applicable)

COVER SHEET

Proposal to: **Center for Produce Safety 2012 RFP**
University of California
1477 Drew Avenue, Suite 101
Davis, CA 95618

Proposal ID Number (assigned by CPS):

Research Priorities Number(s): 1.2 *Buffer Zones from Domestic Animals to Fruit and Vegetable Production*

Submitting Organization (name, address) Office of Research University of California 1850 Research Park Drive Davis, CA 95618		
Title of Proposed Research Evaluation of baseline levels of pathogens in Yolo County potato crops		
Total amount requested $128,884	**Project start date** January 1, 2013	**Project end date** December 31, 2014
Principal Investigator Christine Smith	**Department** Dept. of Plant Science	**Email address** csmith@uc.edu

Send award notice to (name, address, phone, email)
Office of Research, Sponsored Programs
1850 Research Park Drive, Davis, CA 95618
(530) 123-4567
allawards@uc.edu

Send checks to (name, address)
Cashier's Office
University of California Davis
PO BOX 980002
West Sacramento, California 90000-9062

Institutional Approvals	
_____ Principal Investigator Signature Date	_____ Authorized Signature for PI Institution Date
CHRISTINE SMITH _____ Print PI Name	ROBERT WEBSTER _____ Print Authorized Name for PI Institution
THOMAS JONES _____ Co-PI Signature Date	KIMBERLEY ROMERO _____ Authorized Signature for Co-PI Institution Date
_____ Print Co-PI Name	_____ Print Authorized Name for Co-PI Institution

Add Co-PI signature and name blocks as necessary. Signatures and institutional approval for PI and Co-PIs may be on separate forms.

Title:
Evaluation of baseline levels of pathogens in Yolo County potato crops
Include a clear, concise and brief title that describes the project. Capitalize only the first word and proper nouns.

PI:
Christine Smith
Department of Food Science, University of California
One Shields Avenue, Davis, CA 95616
530-757-3813, csmith@uc.edu

Co-PIs:
Thomas Jones
Department of Soil Science, University of Florida
15 University Center, Gainesville, FL 12345
234-567-8901, tjones@fl.eud

Academic Cooperator:
Thomas Smith
Department of Plant Science, University of Alabama
15 University Center, Birmingham, AL 22345
234-765-8901, tsmith@ualb.eud

Industry Cooperators:
Susan Brown
Best Potato Farm
159 Road 39, Davis, CA 95616
530-567-8901, susan@bpf.com

Tim Glenn
Fresh Potato Packers
561 W. Chiles Rd., Davis, CA 95616
530-765-3214, glennt@fppackers.com

Layperson's Summary of Proposal

In non-technical language suitable for dissemination to the public, summarize your proposal. Provide a self-contained description of the project that contains a statement of objectives and methods to be employed. Do not exceed 200 words.

(Sections A-H, 10 page maximum)

A. Technical Abstract *The technical abstract should offer a concise summation of the proposal to the reviewers. It should conclude with a clear impact statement derived from the anticipated outcomes. Do not exceed 500 words.*

B. Background *What is the project purpose? Write a concise statement of the specific issue, problem or research need to be addressed by the project. Why is this project important and timely?*

C. Identification of Target Research Question(s) from RFP Research Priorities *See Research Priorities on pages 3-6 of the RFP guidance document.*

D. Hypothesis *Clearly state the hypothesis-driven approach that conveys the rational and biological or technological foundation for the proposed research.*

E. Statement of Research Objectives

F. Experimental Plan and Methods *For each objective, discuss the procedures you propose to employ. Be specific enough to discuss relevant biological strains, experimental design or parameters of data collection, sampling and sample analysis protocols, and anticipated statistical analysis. Emphasize quantifiable and measurable outcomes.*

G. Expected Results and Impact on the Produce Industry *Describe your previous or current work directly related to the objectives and the results that have been generated to date. For the proposed work describe the anticipated benefits to near-term food safety solutions for the produce industry. Address how this project will guide more specific and effective risk management practices for the industry. Name the beneficiaries of the project; how they will be impacted; and the approximate number of beneficiaries that will be impacted. Include at least one Expected Measurable Outcome statement for your project – goal, benchmark, target, performance measure: Determine what the project will accomplish, the intended results of the project, generally expressed as a GOAL. Outcome-oriented goals identify the ultimate result, while the work plan activities identify how you intend to achieve the goal. Figure out how to measure the results and select the PERFORMANCE MEASURE, an indicator used to observe progress and measure actual results compared to expected results. They are usually expressed in quantifiable terms and should be objective and measurable -numeric values, percentages, scores and indices. Determine the BENCHMARK for each Performance Measure and set a TARGET for future performance.*

EXAMPLE: Characterize the natural resistance of potatoes to PepMV and develop a vaccine to protect potato plants from PepMV (GOAL) in fresh tomato production. No such knowledge and technology currently exist (BENCHMARK). To disseminate this new knowledge and technology, research findings will be presented to over 100 growers at the 2010 annual Agricultural Center Field Day and over 100 scientists at the 2010 annual American Phytopathology Meeting (TARGETS). The success of the project will be measured by attendance (PERFORMANCE MEASURE) at both meetings.

H. Potential Pitfalls to Accomplishing Objectives *Describe the pitfalls that may be anticipated and your strategies for overcoming these pitfalls*

Do not exceed the 10 page limit for Sections A-H
Sections I - P are required. There is no page limit for Sections I-P

I. Project Timeline/Work Plan *Clearly delineate the timeframe anticipated to achieve each objective within the total timeframe of the project. Include a 3-column summary table with the following column headings: (1) Project Activity – activities necessary to accomplish the project objectives; (2) Performed by - personnel involved in each activity; and (3) Timeline - month and year in which the activities will be started and completed. Your data collection plan should be integrated into the project timeline. If subcontractors or collaborative arrangements are used in your project, specify their role and responsibilities in performing project activities*

EXAMPLE: WORK PLAN – January 1, 2013 – June 30, 2015

Project Activity	**Performed by**	**Timeline**
Acquisition of research supplies and materials, equipment. Project team meets to discuss the project and design experiments	Christine Smith	Jan-Feb 2013
Objective 1: describe activities Objective 2: describe activities Objective 3: describe activities	Christine Smith Tom Jones, Co-PI	Jan-Jun 2013 Mar-Sep 2013 Sep-Dec 2013
Progress report	Christine Smith	Mar 2013
Objective 1: describe activities Objective 2: describe activities Objective 3: describe activities Objective 4: describe activities	Christine Smith Tom Jones, Co-PI Jane Smith, Postdoc	Jul-Dec 2013 Jan-Mar 2014
Progress report	Christine Smith	Sep 2013
Objective 2: describe activities Objective 4: describe activities	Christine Smith	Jan-Jun 2014
Progress report	Christine Smith	Mar 2014
Present interim research results at Center for Produce Safety Produce Research Symposium	Christine Smith	June 2014
Objective 2: describe activities Objective 4: describe activities	Christine Smith	Jul-Nov 2014 Sep-Nov 2014
Final Report	Christine Smith	Jan 2015
Present final research results at Center for Produce Safety Produce Research Symposium	Christine Smith Tom Jones, Co-PI	June 2015

J. Facilities and Equipment Available for Research *Briefly describe the facilities and equipment available to you to achieve the proposed objectives*

K. Co-PIs and Cooperators and Role *Specify the role of proposal personnel (PI, Co-PI, cooperators, support staff) in achieving the project objectives, and any facility infrastructure or in-kind support they will contribute*

EXAMPLE: Dr. Smith will devote 0.20 FTE to administer the project, supervise and conduct proposed experiments, perform required data analyses, and communicate research progress and findings to CPS. The Co-PI will support the project as required, contributing 0.05 FTE. In addition, in year one 0.50 FTE postdoc, one 0.25 FTE graduate student, and one 0.25 FTE hourly undergraduate student will work on the proposed project. In year 2, one 0.50 FTE postdoc, one 0.10 FTE graduate student, and one 0.25 FTE hourly undergraduate student will work on the proposed project. Administrative personnel at the University of California and University of Florida have extensive expertise in overseeing and administering contracts and grants from a variety of organizations. Best Potato Farm and Fresh Potato Packers will provide crop and use of their washing and packing facilities for field trials. The Potato Research Council will provide access to fields during cultivation and harvest. Letters of support from industry cooperators are attached.

L. Explanation of Related Research Funding *Identify current or pending research funds that have relevance or overlap with the proposed research (see Section M below also). Briefly discuss how the objectives for this proposal are unique or supplement previous or ongoing research.*

M. Previous SCBGP Funding and/or Submission to Federal or State Grant Program *If the project builds on a previously funded SCBGP project describe how the project compliments and differs from the previously funded project. Provide a summary (three to five sentences per project) of the results of the completed work, the long-term quantifiable effects of the results, especially as they impact the specialty crop industry, and how this project will supplement or build on previous funding from the SCBGP. If the project does not build on a previous SCBGP project, state that it does not. State whether the project has been submitted to or funded by another federal or state grant program and describe how the project supplements the efforts and does not duplicate funding efforts. If the project has not been submitted to or funded by another federal or state grant program, state that it has not.*

EXAMPLE: This project does not build on a previously funded SCBGP project.

EXAMPLE: The University presently has received matching funds from USDA SCBGP to provide 0.50 FTE salary for the Senior Research Specialist. This individual will coordinate most of the laboratory operations and perform a majority of the laboratory and greenhouse experiments. This project will not be a duplicative effort, but rather enhance the program by providing additional dollars to increase the FTE.

EXAMPLE: This project has not been submitted to or funded by another federal or state grant program.

N. Project Oversight *Describe the oversight practices that provide sufficient knowledge of grant activities to ensure proper and efficient administration. Identify the PI and Co-PIs who will oversee the project activities. How will oversight be performed? Include time frame for oversight practices.*

EXAMPLE: The PI has extensive experience working with X virus and molecular characterization of viral genes and functions and the experiments outlined in this project are well within his area of expertise. She will direct and implement the project. Weekly meetings will be held between Dr. Smith, a postdoc

research specialist, and other lab members involved in the project to assess its progress. Progress reports will be submitted to CPS as required. Dr. Smith will periodically consult with the departmental budget manager to ensure that expenditures remain within the budget categories and that funds are spent appropriately.

O. Performance Monitoring Plan *How will performance toward meeting the outcomes in Section G be monitored? Describe the process of collecting and analyzing data to meet the outcome-oriented objectives: who will be collecting the data; describe how and where the data will be collected; outline how data gathered will be used to correct deficiencies and improve performance.*

EXAMPLE*:* The research team will hold internal meetings on a monthly basis to evaluate the progress of the research and troubleshoot any problems or concerns. Our overall performance will be described in the mid-year and final reports to CPS, and presented at the annual CPS Research Symposium. We anticipate at least two peer-reviewed publications and/or professional abstracts from this work. Specifically, we will conduct an initial survey of candidate study sites during the first month of the funding period, and select 10 locations with abundant habitat for intensive, longitudinal sampling to accomplish Objective 1. In consultation with industry cooperators, we will select production blocks and areas representative of the region. To fulfill Objective 2 a standardized data collection sheet and confidential database will also be created during the first month of the study. The data sheet will be piloted with industry cooperators to assess completeness and accuracy of the questions pertaining to management practices. Beginning winter, field sampling and data collection will occur at each study site on a quarterly basis to measure seasonal variations in pathogen prevalence. A total of 400 samples will be tested during the study. Sampling events are divided into four quarters across 10 sites. We will monitor the productivity of the study locations, and effectiveness of the sampling strategies. If necessary, we will modify the protocol to achieve our desired sample size. Laboratory assay performance will be monitored by use of positive and negative controls and standard quality assurance protocols for *E. coli* O157:H7 and *Salmonella* detection in samples. Results of the study will be shared with the industry in coordination with CPS per Objective 3. Throughout the study, we will collect and collate existing information on best management practices. Performance in our outreach objective will be measured by the successful completion and dissemination of science-based online and printed materials using new information gained from this research. The research team will hold internal meetings on a monthly basis to evaluate the progress of the research and troubleshoot any problems or concerns. We will also seek feedback from our industry cooperators and other stakeholders. Performance will be described in our mid-year and final reports to CPS.

P. Literature Cited/Bibliography

BUDGET SUMMARY

Complete the Budget Summary for your project. Total Costs many not exceed $200,000 per year for research projects, $50,000 for proof of concept projects. Budget details and justification should be inserted on the Justification tabs for Year 1 and Year 2 (if applicable). If you will be issuing a subaward to another institution, insert their total costs under Contractual. The institution receiving the subaward must also complete a Budget Summary and Justification which will be submitted as part of your proposal.

PRINCIPAL INVESTIGATOR: Christine Smith

INSTITUTION: University of California, Davis

PROPOSAL TITLE: Evaluation of baseline levels of pathogens in Yolo County potato crops

BUDGET CATEGORIES	YEAR 1	YEAR 2	TOTAL
PERSONNEL			
TOTAL SALARIES	**$29,375.00**	**$26,000.00**	**$55,375.00**
TOTAL BENEFITS	**$8,518.75**	**$7,675.00**	**$16,193.75**
TOTAL PERSONNEL *(salaries + benefits)*	**$37,893.75**	**$33,675.00**	**$71,568.75**
TRAVEL			
TOTAL TRAVEL	**$3,000.00**	**$5,010.00**	**$8,010.00**
EQUIPMENT *(single item > $5,000)*			
TOTAL EQUIPMENT	**$0.00**	**$0.00**	**$0.00**
SUPPLIES AND MATERIALS			
TOTAL SUPPLIES AND MATERIALS	**$14,250.00**	**$18,550.00**	**$32,800.00**
CONTRACTUAL *(subaward to another organization)*			
TOTAL CONTRACTUAL	**$11,927.00**	**$0.00**	**$11,927.00**
OTHER COSTS			
TOTAL OTHER COSTS	**$500.00**	**$500.00**	**$1,000.00**
TOTAL DIRECT COSTS	**$67,570.75**	**$57,735.00**	**$125,305.75**
INDIRECT COSTS *(not to exceed 5% of PERSONNEL costs)*	**$1,894.69**	**$1,683.75**	**$3,578.44**
TOTAL COSTS	**$69,465.44**	**$59,418.75**	**$128,884.19**

BUDGET JUSTIFICATION - YEAR 1

PRINCIPAL INVESTIGATOR: Christine Smith

INSTITUTION: University of California, Davis

PROPOSAL TITLE:
Evaluation of baseline levels of pathogens in Yolo County potato crops

PERSONNEL - YEAR 1

SALARY

	Name, title and work to be performed on project	*FTE %*	*Annual salary*	*Salary requested*
1	Christine Smith, PI	0.1	$0.00	$0.00
2	Thomas Jones, Co-PI	0.05	$0.00	$0.00
3	Jane Smith, Postdoc, will coordinate field collection and conduct all lab test to detect pathogens	0.5	$40,000.00	$20,000.00
4	John Jones, graduate student, will perform lab studies on inactivation of pathogens	0.25	$22,500.00	$5,625.00
5	TBD, undergraduate, will assist in lab with media preparation and plate counting	0.25	$15,000.00	$3,750.00
			TOTAL SALARY	**$29,375.00**

FRINGE BENEFITS

	Name	*Salary requested*	*Benefit rate %*	*Amount requested*
1	Jane Smith	$20,000.00	0.35	$7,000.00
2	John Jones	$5,625.00	0.25	$1,406.25
3	TBD	$3,750.00	0.03	$112.50
4				$0.00
5				$0.00
			TOTAL BENEFITS	**$8,518.75**

TOTAL PERSONNEL (Salary + Fringe Benefits)	**$37,893.75**

TRAVEL - YEAR 1

	See Budget Requirements and Restrictions (2012 RFP, page 9)
	Trip1: $3,000 requested for travel from Davis, CA to six field sites in the Sacramento and San Joaquin Valleys to collect and sample potatoes. 2 people traveling, PI and postdoc. 3 1-day trips and 2 2-day trips in Year 1. Lodging and meals estimated at $1,250 (lodging $150/night/person; meals $64/day/person). Mileage expense for use of private vehicle estimated at $1,250 (2,252 mi @ 55.5 cents/mi).
	Trip 2
TOTAL TRAVEL	**$3,000.00**

EQUIPMENT *(single item > $5,000) - YEAR 1*

	Description and purpose	*Amount requested*
1	None requested	$0.00
	TOTAL EQUIPMENT	**$0.00**

SUPPLIES AND MATERIALS - YEAR 1		
	Description of supply, purpose, quantity and estimated cost	*Amount requested*
1	Petri dishes: 5 * $75/box of 500	$375.00
2	Reservoirs: 5 * $$140/box of 50	$700.00
3	Tissue plates: 9 * $40/25	$360.00
4	Agar: 10 * $175/2kg	$1,750.00
5	Isothiocyanates: 8 * $125/250mg	$1,000.00
6	Amines: 8 * $135/10mg	$1,080.00
7	all other supplies listed as above	$8,985.00
8		
	TOTAL SUPPLIES AND MATERIALS	**$14,250.00**
CONTRACTUAL *(subaward to another institution or organization) - YEAR 1*		
	Name of institution or organization	*Amount requested*
1	University of Florida (see Summary Budget and Justification following)	$11,927.00
	TOTAL CONTRACTUAL	**$11,927.00**
OTHER COSTS - YEAR 1		
	Description , purpose, quantity, and estimated cost	*Amount requested*
1	Publication costs for 2 manuscripts	$500.00
2		
3		
	TOTAL OTHER COSTS	**$500.00**
	TOTAL DIRECT COSTS	**$67,570.75**
INDIRECT COSTS *(not to exceed 5% of PERSONNEL costs)*		
	TOTAL INDIRECT COSTS	$1,894.69
TOTAL COSTS - YEAR 1		
	TOTAL COSTS - YEAR 1	**$69,465.44**

Will your project generate program income in Year 1?

	YES
XX	NO

BUDGET JUSTIFICATION - YEAR 2

PRINCIPAL INVESTIGATOR: Christine Smith

INSTITUTION: University of California, Davis

PROPOSAL TITLE:
Evaluation of baseline levels of pathogens in Yolo County potato crops

PERSONNEL - YEAR 2

SALARY

	Name, title and work to be performed on project	*FTE %*	*Annual salary*	*Salary requested*
1	Christine Smith, PI	0.1	$0.00	$0.00
2	Thomas Jones, Co-PI	0.05	$0.00	$0.00
3	Jane Smith, Postdoc, will coordinate field collection and conduct all lab tests to detect pathogens	0.5	$40,000.00	$20,000.00
4	John Jones, graduate student, will perform lab studies on inactivation of pathogens	0.1	$22,500.00	$2,250.00
5	TBD, undergraduate, will assist in lab with media preparation and plate counting	0.25	$15,000.00	$3,750.00
			TOTAL SALARY	**$26,000.00**

FRINGE BENEFITS

	Name	*Salary requested*	*Benefit rate %*	*Amount requested*
1	Jane Smith	$20,000.00	0.35	$7,000.00
2	John Jones	$2,250.00	0.25	$562.50
3	TBD	$3,750.00	0.03	$112.50
4				$0.00
5				$0.00
			TOTAL BENEFITS	**$7,675.00**

TOTAL PERSONNEL (Salary + Fringe Benefits)	**$33,675.00**

TRAVEL - YEAR 2

	See Budget Requirements and Restrictions (2012 RFP, page 9)
	Trip1: $3,000 requested for travel from Davis, CA to six field sites in the Sacramento and San Joaquin Valleys to collect and sample potatoes. 2 people traveling, PI and postdoc. 3 1-day trips and 2 2-day trips in Year 1. Lodging and meals estimated at $1,250 (lodging $150/night/person; meals $64/day/person). Mileage expense for use of private vehicle estimated at $1,250 (2,252 mi @ 55.5 cents/mi).
	Trip 2: $330 requested for travel from Roseville, CA to Davis, CA June 2014 for PI to present research progress at CPS Research Symposium. 1 2-day trip. Estimated costs $200 lodging (1 night @ $200/person) and $100 meals (2 days @ $50/person); $30 mileage (RT home to conference 54 mi @ 55.5 cents/mile).
	Trip 3: $1,680 requested for travel from Davis, CA to Orlando, FL June 2015 for PI to present final research results at CPS Research Symposium. 1 4-day trip. Estimated costs $650 for airfare; $200 ground transport (airport parking $100, RT shuttle at destination $100); $800 lodging (3 nights @ $200/person) and meals (4 days @ $50/person); $30 mileage (RT home to airport 54 mi @ 55.5 cents/mile).
TOTAL TRAVEL	**$5,010.00**

EQUIPMENT (single item > $5,000) - YEAR 2		
	Description and purpose	*Amount requested*
1	None requested	$0.00
	TOTAL EQUIPMENT	**$0.00**

SUPPLIES AND MATERIALS - YEAR 2		
	Description of supply, purpose, quantity and estimated cost	*Amount requested*
1	Petri dishes: 5 * $75/box of 500	$375.00
2	Reservoirs: 5 * $$140/box of 50	$700.00
3	Tissue plates: 9 * $40/25	$360.00
4	Agar: 10 * $175/2kg	$1,750.00
5	Isothiocyanates: 8 * $125/250mg	$1,000.00
6	Amines: 8 * $135/10mg	$1,080.00
8	all other supplies listed as above	$13,285.00
	TOTAL SUPPLIES AND MATERIALS	**$18,550.00**

CONTRACTUAL (subaward to another institution or organization) - YEAR 2		
	Name of institution or organization	*Amount requested*
1	None requested in Year 2	
	TOTAL CONTRACTUAL	**$0.00**

OTHER COSTS - YEAR 2		
	Description , purpose, quantity, and estimated cost	*Amount requested*
1	Publication costs for 2 manuscripts	$500.00
3		
	TOTAL OTHER COSTS	**$500.00**
	TOTAL DIRECT COSTS	**$57,735.00**

INDIRECT COSTS *(not to exceed 5% of PERSONNEL costs)*	
TOTAL INDIRECT COSTS	$1,683.75

TOTAL COSTS - YEAR 2	
TOTAL COSTS - YEAR 2	**$59,418.75**

Will your project generate program income in YEAR 2?

	YES
XX	NO

SUBAWARD BUDGET SUMMARY

If you are receiving a subaward, complete the subaward budget summary for your portion of the project. Budget details and justification should be inserted on the Justification tabs for Year 1 and Year 2 (if applicable). Provide the project PI with your subaward budget summary and justification forms and a statement of work detailing your work on the project.

CO-PRINCIPAL INVESTIGATOR: Thomas Jones

INSTITUTION: University of Florida

PROPOSAL TITLE: Evaluation of baseline levels of pathogens in Yolo County potato crops

BUDGET CATEGORIES	YEAR 1	YEAR 2	TOTAL
PERSONNEL			
TOTAL SALARIES	**$5,000.00**	**$0.00**	**$5,000.00**
TOTAL BENEFITS	**$1,750.00**	**$0.00**	**$1,750.00**
TOTAL PERSONNEL *(salaries + benefits)*	**$6,750.00**	**$0.00**	**$6,750.00**
TRAVEL			
TOTAL TRAVEL	**$840.00**	**$0.00**	**$840.00**
EQUIPMENT *(single item > $5,000)*			
TOTAL EQUIPMENT	**$0.00**	**$0.00**	**$0.00**
SUPPLIES AND MATERIALS			
TOTAL SUPPLIES AND MATERIALS	**$4,000.00**	**$0.00**	**$4,000.00**
CONTRACTUAL *(subaward to another organization)*			
TOTAL CONTRACTUAL	**$0.00**	**$0.00**	**$0.00**
OTHER COSTS			
TOTAL OTHER COSTS	**$0.00**	**$0.00**	**$0.00**
TOTAL DIRECT COSTS	**$11,590.00**	**$0.00**	**$11,590.00**
INDIRECT COSTS (not to exceed 5% of PERSONNEL costs)	**$337.50**	**$0.00**	**$337.50**
TOTAL COSTS	**$11,927.50**	**$0.00**	**$11,927.50**

SUBAWARD BUDGET JUSTIFICATION - YEAR 1

CO-PRINCIPAL INVESTIGATOR: Thomas Jones

INSTITUTION: University of Florida

PROPOSAL TITLE: Evaluation of baseline levels of pathogens in Yolo County potato crops

PERSONNEL - YEAR 1 (SUBAWARD)

SALARY

	Name, title and work to be performed on project	*FTE %*	*Annual salary*	*Salary requested*
1	Jane Smith, Postdoc, will conduct lab tests to detect pathogens	0.2	$25,000.00	$5,000.00
2				$0.00
3				$0.00
4				$0.00
			TOTAL SALARY	**$5,000.00**

FRINGE BENEFITS

	Name	*Salary requested*	*Benefit rate %*	*Amount requested*
1	Jane Smith	$5,000.00	0.35	$1,750.00
2				$0.00
3				$0.00
4				$0.00
			TOTAL BENEFITS	**$1,750.00**
			TOTAL PERSONNEL (Salary + Fringe Benefits)	**$6,750.00**

TRAVEL - YEAR 1 (SUBAWARD)

	See Budget Requirements and Restrictions (2012 RFP, page 9)
	Trip1: $840 requested for travel from Gainesville, FL to Davis, CA to coordinate testing protocols. 1 person traveling, Co-PI. 1 3-day trip in Year 1. Lodging and meals estimated at $355 (lodging $100/night; meals $15/day). Airfare estimated at $400. Airport parking $60. Mileage from home to airport RT $25 (50 mi @ 55.5 cents/mi).
	Trip 2
	TOTAL TRAVEL **$840.00**

EQUIPMENT *(single item > $5,000) -* ***YEAR 1 (SUBAWARD)***

	Description and purpose	*Amount requested*
1		$0.00
	TOTAL EQUIPMENT	**$0.00**

SUPPLIES AND MATERIALS - YEAR 1 (SUBAWARD)		
	Description of supply, purpose, quantity and estimated cost	*Amount requested*
1	Agar: 10 * $175/2kg	$1,750.00
2	Isothiocyanates: 8 * $125/250mg	$1,000.00
3	Amines: 8 * $135/10mg	$1,080.00
4	all other supplies listed as above	$170.00
5		
6		
7		
8		
	TOTAL SUPPLIES AND MATERIALS	**$4,000.00**
CONTRACTUAL *(subaward to another institution or organization) -* ***YEAR 1 (SUBAWARD)***		
	Name of institution or organization	*Amount requested*
1		
	TOTAL CONTRACTUAL	**$0.00**
OTHER COSTS - YEAR 1 (SUBAWARD)		
	Description , purpose, quantity, and estimated cost	*Amount requested*
1		
2		
3		
	TOTAL OTHER COSTS	**$0.00**
	TOTAL DIRECT COSTS	**$11,590.00**
INDIRECT COSTS *(not to exceed 5% of PERSONNEL costs)*		
	TOTAL INDIRECT COSTS	**$337.50**
TOTAL COSTS - YEAR 1 (SUBAWARD)		
	TOTAL COSTS - YEAR 1	**$11,927.50**

SUBAWARD BUDGET JUSTIFICATION - YEAR 2

CO-PRINCIPAL INVESTIGATOR:				
INSTITUTION:				
PROPOSAL TITLE:				
PERSONNEL - YEAR 2 (SUBAWARD)				
SALARY				
	Name, title and work to be performed on project	*FTE %*	*Annual salary*	*Salary requested*
1				$0.00
2				$0.00
3				$0.00
4				$0.00
			TOTAL SALARY	**$0.00**
FRINGE BENEFITS				
	Name	*Salary requested*	*Benefit rate %*	*Amount requested*
1				$0.00
2				$0.00
3				$0.00
4				$0.00
			TOTAL BENEFITS	**$0.00**
			TOTAL PERSONNEL (Salary + Fringe Benefits)	**$0.00**
TRAVEL - YEAR 2 (SUBAWARD)				
	See Budget Requirements and Restrictions (2012 RFP, page 9)			
	Trip 1			
	Trip 2			
			TOTAL TRAVEL	
EQUIPMENT (single item > $5,000) - YEAR 2 (SUBAWARD)				
	Description and purpose			*Amount requested*
1				$0.00
			TOTAL EQUIPMENT	**$0.00**

SUPPLIES AND MATERIALS - YEAR 2 (SUBAWARD)		
	Description of supply, purpose, quantity and estimated cost	*Amount requested*
1		
2		
3		
4		
5		
6		
7		
8		
	TOTAL SUPPLIES AND MATERIALS	**$0.00**
CONTRACTUAL (subaward to another institution or organization) - YEAR 2 (SUBAWARD)		
	Name of institution or organization	*Amount requested*
1		
	TOTAL CONTRACTUAL	**$0.00**
OTHER COSTS - YEAR 2 (SUBAWARD)		
	Description , purpose, quantity, and estimated cost	*Amount requested*
1		
2		
3		
	TOTAL OTHER COSTS	**$0.00**
	TOTAL DIRECT COSTS	**$0.00**
INDIRECT COSTS *(not to exceed 5% of PERSONNEL costs)*		
	TOTAL INDIRECT COSTS	**$0.00**
TOTAL COSTS - YEAR 2 (SUBAWARD)		
	TOTAL COSTS - YEAR 2	**$0.00**

CURRENT AND PENDING SUPPORT

PRINCIPAL INVESTIGATOR: CHRISTINE SMITH
INSTITUTION: UNIVERSITY OF CALIFORNIA, DAVIS
PROPOSAL TITLE: ASSOCIATE PROFESSOR

Instructions: *List information for active projects and pending proposals, including this proposal, for the PI and all Co-PIs. All efforts to which the principal investigator (PI) and co-PI have committed a portion of their time must be listed, whether or not salary for the person involved is included in the budget for the project.*

ACTIVE PROJECTS

Last name (List PI first)	Funding Agency	Title of project	% effort	Total award amount	Start-end dates
Smith	USDA	Enhancing Pathogen Detection and Crop Protection	5	$125,000	1/1/10-12/31/12
Smith	CDFA	Enhancing Detection Techniques	20	$250,000	1/1/11-9/30/13
Jones	NIFA	Enhancing Pathogen Detection and Crop Protection	25	$300,000	1/1/10-12/31/12

PENDING PROPOSALS

Last name (List PI first)	Funding Agency	Title of project	% effort	Total award amount	Start-end dates
Smith	CPS	Evaluation of baseline levels of pathogens in Yolo County potato crops	10	$125,305	1/1/13-12/31/14
Jones	CPS	Evaluation of baseline levels of pathogens in Yolo County potato crops	5	$11,927	1/1/13-12/31/14

BIOGRAPHICAL SKETCH

***Instructions**: Provide a biographical sketch for the PI and each Co-PI. Bio-sketch for each individual may not exceed 2 pages.*

Name	Position Title
CHRISTINE SMITH	ASSISTANT PROFESSOR
Institution/Organization	
UNIVERSITY OF CALIFORNIA, DAVIS	

Education and Training

Institution and Location	Degree	Year	Field of Study
University of California, Davis, CA	BS	2000	Food Science
Cornell University, Ithaca, NY	PhD	2005	Food Science & Tech.

Positions and Employment

Dates	Title	Institution/Organization
2000-2001	Staff scientist	Del Monte Foods, Walnut Creek, CA
2002-2005	Graduate student researcher	Cornell University, Ithaca, NY
2005-2006	Postdoctoral researcher	University of Washington, Seattle
2006-	Assistant Professor	University of California, Davis

Other Experience and Professional Memberships

Dates	Title	Institution/Organization
2004-	Member	International Assoc. for Food Protection
2006-	Ad hoc reviewer	Journal of Food Protection
2002-	Member	American Society for Microbiology

Honors

Dates	Honor
2006	Elected to Gamma Sigma Delta, national honorary fraternity

Selected Peer-reviewed Publications

Publications most relevant to this proposal (limited to 5)

1. Pub1
2. Pub2
3. Pub3
4. Pub4
5. Pub5

Additional recent publications of importance to the field

1. Pub1
2. Pub2
3. Pub3

LETTER OF SUPPORT FROM INDUSTRY COOPERATOR

INDUSTRY COOPERATOR LETTERHEAD
Company Name
Address

Date

PI name
PI address

Dear Dr. PI:

We appreciate the opportunity to support your proposed research on agricultural water (Research Priority 1.4.b in the 2012 CPS RFP).

Our company is a large privately owned greenhouse and vegetable operation in California's Central Valley. We take pride in our use of GAPs and strive to improve and promote our food safety practices. We encourage innovative food safety research and have embraced new science-based technologies in the past.

To that end, we offer our support to your project. We believe that your research into how long human pathogens persist on the edible portion of a crop, and what factors enhance or diminish survival, will yield data important to the produce industry.

Our support will include access to fields for 5 days during harvest periods, and use of our company's produce wash facilities and storage facilities during those 5 days. In addition, our production manager will meet with you as required to answer questions about standard procedures for potato cultivation, harvest and storage.

Sincerely,

Industry Cooperator Name and Title
Company Name

ABBREVIATION AND ACRONYMN KEY

ABL	Advanced Biosensors Laboratory
ATCC	American Type Culture Collection
ATP-BLIA	ATP bioluminescence immunoassay
CDC	Centers for Disease Control and Prevention
CFU	Colony-forming units
EHEC	Enterohemorrhagic *E. coli*
ECL	Electrochemiluminescence
ELISA	Enzyme-linked immunosorbent assay
EPA	Environmental Protection Agency
FDA-BAM	Food and Drug Administration-Bacteriological Analytical Manual
MSD	Meso Scale Diagnostics
MUG	4-Methylumbelliferyl-beta-D-glucuronide
NOAA	National Oceanic and Atmospheric Administration
PCR	Polymerase chain reaction
PMACS	Portable Multi-use Automated Concentration System
TC-SMAC	Tellurite Cefiximine Sorbital MacConkey
TSAYE	Tryptic soy agar with 0.6% yeast extract

RESUBMISSION FORM

***Instructions**: If you have previously submitted a similar proposal to CPS, include this form with your 2012 proposal. Write a brief narrative (not to exceed 1 page) describing what has been revised, added or deleted in your 2012 proposal. A "new" proposal is expected to be substantially different in content and scope, would exhibit a significant change in direction and approach, and include substantial changes in all sections of the research plan.*

Name Christine Smith
Title of Previous Submission Evaluation of pathogens in Yolo County potato crops
Year Submitted 2009

How does this proposal differ from your previous submission?

I have revised my 2009 proposal in the following areas:

I have narrowed the objectives of the project:
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

I will have a subaward to the University of Florida only in Year 1 for the project:
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

I have added industry cooperators to provide access to fields, washing and packing facilities during harvest:
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.