1. **Announcement Number:** Open Broad Agency Announcement Number (OBAA) 14-003/Call 00010

2. **FBO Solicitation Number:** HSHQDC-14-R-B0009

3. **Solicitation Event Dates/Time (Local Eastern Time):**

    - Notification to Submit Full Proposals –
    - Full Proposal Due Date – May 19, 12:00 PM EST

There will be no exceptions to the time and date on which responses are due, unless determined otherwise by the Government. Full proposals received after the designated closing date/time will be rejected and will not be further considered for award. In the event that the requirement is cancelled, the government will not reimburse the contractor for proposal costs or any related costs.

Note: This Call will be conducted in accordance with the Single-Phased Evaluation Process as described under Section 1.6 of the OBAA. The OBAA Solicitation HSHQDC-14-R-B00009 was posted on Federal Business Opportunities on June 16, 2014. See Link: https://www.fbo.gov/index?s=opportunity&mode=form&id=3935288433485a6ee877134ac7d2a8a9&tab=core&_cview=1

This Call will consist of the solicitation, receipt, and evaluation of a Full Proposal, limited to 30 pages, excluding the Formal Transmittal Letter, Cover Page, Summary of Costs and Related Information, Table of Contents and resumes/biographical information for proposed performers. Once the Full Proposal peer/scientific review process has been completed, offerors will be notified via e-mail, or in writing, that its proposal has been selected, selected but not funded, or not selected for award.

4. **OBAA Call Technical Topic Area (TTA) of Interest:**

Chemical and Biological Research and Development CBD.02 – Surveillance and Detection: Advance the capability to provide early warning and detection of a chemical or biological incident in a cost-sustainable way. Effective surveillance provides essential information to decision authorities on a timescale that allows them to take actions towards mitigating or responding to the threat. Efforts in this area include bioinformatics, advanced analytics, distributed and networked architectures, open area and facility surveillance through sensing and data integration, and development or improvement of chemical and biological sensors.

4.1. Research Opportunity Description

4.1.1. DHS S&T: Exploration of thermotherapy devices to provide field-scale delivery of thermotherapy to treat HLB-diseased citrus trees

Background

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. The Chemical and Biological Defense Division of S&T supports this mission by identifying and developing technologies for the DHS operational components that are needed to reduce the probability and potential consequences of a biological pathogen or a chemical attack on the nation's civilian population, its infrastructure, or its agricultural system.

Pursuant to this mission, the Chemical and Biological Defense Division (CBD) seeks technologies to prevent and protect against any infectious disease or organism attack on our Agricultural resources. The Agricultural Defense Branch (Ag), as part of the CBD, has the mission to conduct risk-based agricultural threat countermeasure development; to accelerate and expand the development of current and new medical and diagnostic countermeasures to detect, and prevent the spread of, an intentional introduction or natural occurrence of a catastrophic foreign animal and plant disease or pests in coordination with internal and external stakeholders. DHS carries out this responsibility in close collaboration with its sector-specific agency partners (especially United States Department of Agriculture, USDA).

The impact of terrorist or unintentional introduction of a foreign animal or plant disease or pests on the U.S. economy is of great concern in the United States. There are vulnerabilities that create the need to perform surveillance and monitoring of endemic and foreign animal and plant diseases rapidly, accurately, and economically using a single diagnostic sample. Homeland Security Presidential Directive (HSPD) 9 dictates research to "expand development of common screening and inspection procedures for agriculture and food items entering the United States and to maximize effective domestic inspection activities for food items within the United States" in an effort to reduce vulnerabilities.

One of the most serious citrus diseases in the world, Huanglongbing (HLB, citrus greening)—poses a very real threat to sustainable citrus production in the United States. During August 2013, USDA senior leaders heard from and listened to the citrus industry's request for more urgency and greater coordination in the response to HLB. As a result, Secretary of Agriculture Tom Vilsack created the HLB Multi-Agency Coordination (MAC) initiative in December of 2013 to foster greater coordination among federal and state agencies in responding to HLB. The HLB MAC Group is part of a unified emergency response framework to better position the

Department to act in a more agile, concerted and direct way to address both the immediate and long-term needs of the citrus industry. The MAC Group includes representatives from USDA's Animal and Plant Health Inspection Service (APHIS), the MAC lead agency; Agricultural Research Service (ARS); and National Institute of Food and Agriculture (NIFA); the Environmental Protection Agency (EPA), as well as State departments of agriculture and the citrus industry. The HLB MAC Group helps to coordinate and prioritize Federally-funded research with industry's efforts to complement and fill research gaps, reduce research duplication, speed progress toward achieving disease control, and more quickly provide practical, deployable tools to citrus growers for reducing the severity of HLB.

The mission of this project is the development of systems to aid in protecting the U.S. public health, food supply and livestock, and natural resources. Areas that will be addressed are: 1) delivery of a thermotherapy tool that is scalable to all segments of the citrus industry and; 2) demonstrates the ability to suppress and/or kill bacterial cells with minimal damage to trees. Tool(s) developed must provide delivery of thermotherapy to above ground portions of trees, below ground parts of trees or both.

It is envisioned that the most promising delivery concepts identified from this feasibility study will inform longer term technology and system development efforts that represent high payoff investments to yield Agricultural Therapy Tools. Thus, the purpose of this BAA Call is to identify technological approaches and evaluate feasibility of these thermotherapy applications to manage disease and prevent further economic damage to the U.S. citrus industry.

4.1.2. Description Technical Topic Areas

There is one technical topic area being solicited under this BAA Call: Scalable delivery of thermotherapy to citrus trees. The technical topic area is focused on a specific customer and application, namely, the United States Department of Agriculture Animal and Plant Health Inspection Service Plant Protection and Quarantine (APHIS PPQ).

Focus should be on engineering and evaluation of scalable technologies that are energy efficient, durable across time and environments, cost effective to build and fuel, labor efficient, transferable, and constructed from common or easily accessible components that can heat above-ground trees and/or soil. The disease-causing agent responsible for HLB is a bacterium (Candidatus Liberibacter asiaticus) known to be sensitive to increased temperatures. Using heat treatment to inactivate/kill bacterial cells within tree host tissues is termed 'thermotherapy'. After exposure to a source of controlled heat for a period of time, HLB-diseased trees regrow tissues that are less severely diseased compared with tissues grown pre-treatment. Thermotherapy can extend the life of diseased trees, thereby increasing the number of production cycles and economic viability of a diseased grove.

The Government has established preliminary metrics for assessing technologies in each area. Given that the feasibility of achieving all of these capabilities in a single delivery system is unknown and anticipated to be high risk, the Government has established the following priority order for achieving the performance metrics:

1. The concept must be able to deliver thermotherapy that is scalable;
2. The concept must be durable across time and environments;
3. The concept must be able to heat above ground or below ground portions of trees or both;
4. The concept must deliver the appropriate time temperature combination to inactivate/kill bacterial cells while doing minimal damage to the tree;
5. The end device should be envisioned to have minimal consumable costs, power requirements, weight and be easily deployable and maneuverable;
6. After treatment, healthy plant regrowth must occur;
7. Treatment must result in marketable fruit produced from treated trees.

For your reference, selected online sources for additional information

- Citrus_indust.:http://www.crec.ifas.ufl.edu/extension/trade_journals/2013/2013_September_Thermo.pdf
- Citrus Research and Development Foundation, Inc.: http://citrusrdf.org/thermal-therapy
- USDA ARS: http://www.ars.usda.gov/is/AR/archive/aug13/citrus0813.htm
- APS: http://www.apsnet.org/meetings/Documents/2012_Meeting_Abstracts/aps12abP124.htm

  Note: The APS website is slow to open. The website will initially lead to a login page (no action required). The abstract will automatically load after a few minutes.

The goal is to demonstrate the potential to achieve the metrics in at least 4 areas listed above in order to be competitive.

5. Number of Selections: It is anticipated that multiple selections will be made depending on the quality of the Proposals and availability of funds.

6. Anticipated Ceiling: Although subject to official fiscal appropriation and availability, it is anticipated that approximately $1.5 million of Fiscal Year (FY) 2015 funds will be available for any resultant awards under this BAA Call. **The Government will reserve the right to incrementally fund any resultant contracts awarded from this BAA Call as provided by the FAR 52.232-22, "Limitation of Funds."** Contracts or other agreements that obligate funds will not have an initial period of performance that exceeds 12 months from the date of contract award. Each contract will be supported at a level up to $500,000 per 12 month period. However, Offerors will be able to propose a base year effort with additional option years.

7. Anticipated Award Type: Award type is anticipated to be in the form of Cost Reimbursement type contracts. However the Government reserves the right to award firm-fixed price contracts, cooperative agreements, Other Transactions (OTs) (if authorized by law at time of award), or interagency agreements to appropriate parties should the situation warrant.

In the event an offeror or subcontractor is a Federally Funded Research and Development Center (FFRDC), Department of Energy National Laboratory, or other Federally funded entity, DHS/S&T will work with the appropriate sponsoring agency to issue an interagency agreement pursuant to the Economy Act (31 U.S.C. 1535) or other appropriate authority.

8. **Anticipated Award Dates:** The 4rd Quarter of Fiscal Year 2015 is when the government anticipates making any resultant contract awards under this Call for those Proposals are selected. However, the award date for any resultant contract award may vary based on the quality of the proposals received and the availability of funds.

9. **White Paper Instructions:** NA – No white papers are being requested in response to this solicitation.

10. **Full Proposal Instructions:** Offerors shall submit their Full Proposals in accordance with BAA 14-003, Section 5.4 - Format and Content of Full Proposals.

11. **Evaluation Criteria:** Full Proposals will be evaluated in accordance with the following evaluation criteria:

Criterion I: Scientific Merit: The Offeror must demonstrate understanding of the critical technology and scientific challenges required to achieve the desired performance metrics and strategy as described elsewhere within this announcement. The research approach should be scientifically sound, practical, and technically defensible. The technical approach is innovative and has advantages over other solutions, if successfully implemented. The research must contribute to scientific knowledge in the topic area and must enumerate potential benefits of the proposed research. The proposal shall demonstrate an awareness of the state-of-the-art. The proposal should be well-prepared with supportive information that is self-explanatory. All critical scientific and technical issues and risks are clearly identified, and the planned development approach and risk mitigation efforts are clearly defined and feasible. The merit of the technical approach over other competing approaches should be clearly delineated.

- The potential to advance thermotherapy treatment capabilities of HLB in citrus
- The potential success for technology deployment into a large-scale field environment
- The number of practical, commonly assessable, durable, and cost efficient components used to construct and deploy the device.

Criterion II: Sound Technical Approach: Of importance is how the proposed technology or deliverable will meet or exceed the performance requirements for this program and be commercially applicable (how the proposed technology will be transitioned into a sustainable commercial market and what the intended use, or concept of operations, would be).

- Offeror's awareness of the pitfalls and feasibility of the proposal as well as a proposed plan to minimize and/or mitigate these risk(s)

Criterion III: Sound Management Approach: Presentation of a sound managerial approach to the proposed work, including a demonstrated understanding of the issues and challenges associated with achieving the goals of the topic, and a strategy to address those issues and challenges. A successful team will possess multidisciplinary expertise to address the complexity of the effort.

Criterion IV: Capability to Perform and History of Performance: Demonstration of a capability to perform the proposed work, including history of previous performance in developing related solutions and technologies. Specific considerations will include:

- The offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposed objectives
- The qualifications, capabilities, and experience of the proposed Principal Investigator, team leader, or other key personnel who are critical to achievement of the proposed objectives.

Criterion V: Cost Realism/Reasonableness: Presentation of accurate, well-founded and reasonable estimates of all costs related to performance of the proposed effort, including an appropriate allocation of labor resources. Members of the Peer Review panel will be looking for overall best value to the government.

Evaluation of Full Proposals will be based on an assessment of the overall best value to the government based on the aforementioned criteria. Awards will be made based upon Full Proposal evaluation, funds availability, and other programmatic considerations, including awards to lesser rated proposals where orthogonal or alternative approaches and technologies are deemed to be more technically advantageous. Once the proposal evaluation process is complete, Offerors will be notified of selection or non-selection for an award. Offerors not selected for an award may request feedback regarding the evaluation findings of submitted proposals. A written request to the Contracting Officer must be received within 3 calendar days of notification of non-selection.

12. **Proprietary Information**: The Government will be utilizing non-federal employees for both subject matter expertise and administrative assistance in accordance with Section 6.2 of the OBAA. As a reminder, it is the sole responsibility of the contractor to submit the completed company-to-company agreement attached to this BAA Call. The company-to-company agreement is due at the time of proposal due date. If company-to-company agreement is not received with the proposal, the proposal will not be further evaluated for award.

The list below contains Points of Contact (POC) within each Government support company who can facilitate the negotiation of the company-to-company agreement.

Company: NOBLIS
POC: Andrew Rak Andrew.rak@noblis.org

Any proprietary information should be clearly marked within the response. If no proprietary information is submitted, the company-to-company agreements are not required.

13. Foreign Concerns: Foreign persons are advised that their participation may be subject to Export Control restrictions. Any such restrictions shall be reviewed on an individual award basis.

14. Questions: Any questions concerning this call must be submitted via email to the Contract Specialist at jigisha.patel@hq.dhs.gov and copy the Contracting Officer at Michael.Jones@hq.dhs.gov no later than **May 4, 2015 1:00 PM EST** in the following format:

Question #	Reference	Contractors' Question
1	General (if there is no specific document reference)	
2	(Example) BAA 14-003, page 15, Section 5.2, first paragraph, second sentence	
3	(Example) BAA 14-003/Call 00010, page 4, Section 11, first sentence	

Please include "Questions for BAA 14-003/ Call 00010" in the subject line. All questions and responses will be posted on the Federal Business Opportunities website http://www.fbo.gov and https://baa2.st.dhs.gov . Questions will only be accepted or answered electronically.