1. **Announcement Number:** Open Broad Agency Announcement Number (OBAA) 14-003/Call 0022

2. **FBO Solicitation Number:** HSHQDC-14-R-B0009
3. **Solicitation Event Dates/Time (Local Eastern Time) :**

- White Paper Opening Date – 19 May 2017
- White Paper Closing Date – **19 June 2017 3:00 PM**
- Notification of Selection/Non Selection of White Papers– 19 July 2017
- Notification to Submit Full Proposals– 19 July 2017
- Full Proposal Due Date– **18 August 2017 3:00 PM**
- Notification of Selection/Non Selection of Full Proposals– 19 September 2017

There will be no exceptions to the time and date on which responses are due, unless determined otherwise by the Government. White Papers and Full Proposals received after the designated closing date/time will not be considered.

Note: This Call will be conducted in accordance with the Two-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 below link.

https://www.fbo.gov/spg/DHS/OCPO/DHS-OCPO/HSHQDC-14-R-B0009 /listing.html

This Call will consist of the solicitation, receipt, and evaluation of both White Papers and Full Proposals. Under this evaluation, Phase 1 will consist of the solicitation, receipt, and evaluation of the White Papers (using standardized Department of Homeland Security (DHS) Chemical Biological Defense Division "Project Proposal Form" format) from potential performers. Entries in the various sections of the Project Proposal Forms (White Papers) should be concise and conform to the specified formatting and word count limitations. No formal transmittal letter is required for the Phase 1 responses. Once the white paper peer/scientific review process has been completed, offerors will be notified via e-mail, or in writing, whether as a result of its white paper submission, the offeror is "encouraged" or "not encouraged" to submit full proposals.

A down-selection process will then be conducted by DHS and those Phase 1 White Paper Proposal Form (OBAA Attachment A) proposals encouraged to submit full proposals will be invited to participate in Phase 2, which 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:

The following Technical Topic Area (TTA) is representative only. It is provided to help interested offerors understand the Call 0022 class of need and potential scope.

CBD.04 – System Studies: Research to conduct studies and analysis to identify gaps in technology and operational concepts and to support formulation of requirements for chemical and biological countermeasure development.

Current specific areas of interests are transit system defensive architectures and surveillance architectures to detect and/or characterize a biological attack.

CBD.06 – CBRN Risk Analysis and the Biological Threat Characterization Program (BTCP): Research and development of next generation and novel methodological approaches to terrorism risk analysis, intentional attack analysis, scenario modeling and simulation to understand the impact of a biological attack on the country. Biological threat information requirements are identified and prioritized from internal DHS sources and other Federal Government partners. The BTCP includes experiments to characterize agents and their properties at the National Biodefense Analysis and Countermeasures Center (NBACC).

4.1. Research Opportunity Description

4.1.1 DHS S&T: CAPABILITIES IN ADVANCED PATHOGEN CHARACTERIZATION AND PREDICTIVE ANALYTICS

Background

The U.S. Department of Homeland Security (DHS) is committed to using and developing state-of-the-art technologies to make America safer. The DHS Science and Technology Directorate (S&T) is focused on developing innovative technology solutions and providing assessments, analyses and reports for the Homeland Security Enterprise. DHS's mission space includes preventing, detecting, responding to, and recovering from intentional or accidental introduction of biological and chemical agents that present a threat against the Nation's human population and critical infrastructure. The Chemical Biological Defense Division (CBD) within the Homeland Security Advanced Research Projects Agency (HSARPA) of DHS S&T supports this preparation for a biological threat event by identifying and developing technologies for DHS operational components to increase situational awareness, reduce potential consequences, and quicken appropriate responses. To ensure current and continuous customer, stakeholder, and developer feedback, DHS S&T is actively engaged with DHS operational components; federal, state, and local authorities; and industry to develop and transition new technologies that significantly improve upon current capabilities to respond to threats.

The Department of Homeland Security Science and Technology Directorate (DHS S&T) Chemical and Biological Defense Division (CBD) has the need to develop methodologies to rapidly characterize the virulence of existing and emerging biothreats to inform risk assessments, disease preparedness and response activities. Biothreat agents (with a few minor exceptions such as smallpox), exist in nature with a high degree of biodiversity. Within this diverse population, generally only a few strains have been analyzed, which leads to an incomplete understanding of why a particular strain is more pathogenic than a closely related strain/serotype. Therefore, DHS has a critical need to characterize the broader diversity of biothreat agents. Traditional pathogen characterization methods (i.e. animal studies, cell culture, bacterial culture, etc.) can be time consuming and expensive, and when used to examine all existing threat agents will become overly burdensome and intractable. DHS S&T seeks to develop novel methodologies that can be broadly applied to explore the biodiversity of pathogens to elucidate the genotypic, phenotypic and functional determinants that make a pathogen a biothreat agent.

4.1.2. Description of White Paper Technical Topic Areas:

DHS S&T CBD is seeking improved approaches, technologies, and/or methods to more efficiently and effectively examine the biodiversity of biothreat agents and in the process inform our understanding of their virulence and pathogenicity. The ultimate goal is to better understand and model the mechanisms by which a threat agent acts in order to predict future disease hazards. DHS S&T CBD is interested in state-of-the-art approaches that are in development, currently exist or could be easily tailored for viral and bacterial biothreats to develop the ability to:

- Efficiently characterize known and unknown pathogens (novel, enhanced, advanced);

- Rapidly predict and model the virulence of novel (enhanced and advanced), unknown, emerging or re-emerging infectious diseases

Pursuant to this mission, the Chemical and Biological Defense Division seeks research and information to address either or both of the following two technical topic areas:

1. Identification of unique threat agent strains or isolates and characterization using traditional characterization methods;
2. Identification of novel methods to characterize the pathogenicity of threat agents.

An offeror may submit a proposal for any one or more of the Technical Topic Areas (TTA); however, a separate proposal must be submitted for each TTA.

4.1.2.1 Technical Topic Area 1:

Focus Area 1: Identification of unique threat agent strains or isolates.

Responses should detail how the approach/technology/method will:

- Identify unique threat agent strains or isolates including geographic source, sample source (e.g., clinical specimens, carcasses, soil), and known characteristics (e.g., colony or cellular morphology, biochemical characteristics) and provide viable stocks of the strains to the Department of Homeland Security under a Material Transfer Agreement;

Focus Area 2: Characterization of Threat Agents using traditional characterization methods

Responses should detail how the approach/technology/method will:

- Characterize threat agent strains or isolates through subculturing, cellular and colony morphology, growth kinetics, biochemical and phenotypic properties, virulence traits, and drug sensitivity;
- Perform genetic analysis through nucleic acid extraction, genotyping, and whole genome sequencing and bioinformatics analysis;

4.1.2.2 Technical Topic Area 2:

Focus Area 1: Novel methods to characterize and model pathogenicity of threat agents

DHS S&T CBD is seeking responses that detail innovative, systems-level approaches or results-proven technology solutions for more efficient pathogen characterization in order to develop improved predictive capabilities.

Responses should detail how the approach/technology/method will:

- Characterize and quantitatively measure characteristics (e.g. genomics, proteomics, metabolomics, lipidomics, etc.) of a threat agent (or closely associated taxonomic relatives) to better understand the phenotypic and functional diversity therein;
- Result in robust predictive pathogenesis models;
- Be broadly applicable across the spectrum of biothreat agents and potential hosts;
- Improve confidence in data produced;
- Reduce use of animal models;
- Reduce time and cost of the characterization process.

Successful white papers and proposals will offer a holistic, systems biology-type approach to biothreat agent characterization that can be scaled and applied to multiple pathogen types and host types. Proposals that offer to solely address genetic sequencing of pathogens without examining the corollary phenotypic or functional information will not be favorably viewed. Offerors should demonstrate their ability to procure and work with multiple biothreat agents and/or the capability to form scientific collaborations to do so.

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

6. **Anticipated Ceiling:** Although subject to official fiscal appropriation and availability, it is anticipated that Fiscal Year (FY) 2018 funds will be available for any resultant awards under this OBAA Call. **The Government will reserve the right to incrementally fund any resultant proposals awarded from this OBAA 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. 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 will reserve the right to award Fixed Price or Interagency Agreements (IAs) to appropriate parties should the situation warrant.

8. **Anticipated Award Dates:** The 1st Quarter of FY 2018 is when the Government anticipates making any resultant awards under this Call for those White Papers that 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:** Offerors shall submit their White Papers in accordance with BAA 14-003, Section 5.3 - Format and Content of White Paper (Attachment A, White Paper Proposal Form).

   White papers must be submitted to the DHS S&T BAA Portal at https://baa2.st.dhs.gov/portal/BAA/ **White Papers must not be submitted to the OBAA FBO link nor should they be submitted directly to the DHS Contracting Officer. Please carefully follow all instructions shown in Section 5.2, Application and Submission Process.**

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

    Proposals must be submitted to the DHS S&T BAA Portal at https://baa2.st.dhs.gov/portal/BAA/

    Proposals must not be submitted to the OBAA FBO link nor should they be submitted directly to the DHS Contracting Officer. Please carefully follow all instructions shown in Section 5.2, Application and Submission Process.

11. **Evaluation Criteria:** White Papers and Full Proposals will be evaluated in accordance with the evaluation criteria contained in the OBAA 14-003, Section 6.1 – Evaluation Criteria.

    Evaluation of the submissions will be based on an assessment of the overall best value to the Government based on the aforementioned criteria. Award(s) will be made based upon White Paper and 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 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. **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.

13. **Questions**: Any questions concerning this Call must be submitted via email to the Contracting Officer at Michael. Jones@hq.dhs.gov no later than **June 7, 2017, 3:00 PM EST** in the following format**:**

Question #	Reference	Contractors' Question
1	General (if there is no specific document reference)	
2	(Example) OBAA 14-003, page 15, Section 5.2, first paragraph, second sentence	
3	(Example) OBAA 14-003/Call 0022, page 2, Section 9, first sentence	

Please include "Questions for OBAA 14-003/Call 0022" 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.