Research and Development Directorate (RD)
Enabling Capabilities Department (RD-EC)

Fundamental Research to Counter Weapons of Mass Destruction (C-WMD)

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1. Introduction and Scope

This government Call is an endeavor focused on the fundamental research needs of DTRA for entities not eligible under the current Fundamental Research Broad Agency Announcement, HDTRA1-14-24-FRCWMD-BAA. DTRA has the mission to safeguard America and its allies from WMD and provide capabilities to reduce, eliminate, and counter the threat and effects from chemical, biological, radiological, nuclear, and high yield explosives (CBRNE). DTRA seeks to identify, adopt, and adapt emerging and revolutionary sciences that may demonstrate high payoff potential to C-WMD threats.

This Call solicits ideas and topic-based white papers for long-term challenges that offer a significant contribution to: the current body of knowledge, the understanding of phenomena and observable facts, significantly advance revolutionary technology, new concepts for technology application, or that may have impact on future C-WMD threat reduction or capabilities.

A portion of this effort is expected to be devoted to awards for science, technology, engineering and mathematics education programs with a C-WMD focus; such as, but not limited to, postdoctoral fellowships, stipends, degrees, visiting scientist programs, student exchange programs, and development of accredited C-WMD curricula.

Contracted Fundamental Research includes research performed under grants, contracts (awards), or OTAs that are (a) funded by budget Category 6.1 (Basic Research), whether performed by universities or industry or (b) funded by budget Category 6.2 (Applied Research) performed on-campus at a university. Further, fundamental research means basic and applied research in science and engineering by any eligible performer for which the results ordinarily are published and shared broadly within the scientific community. Fundamental research is distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons. Fundamental research provides for science and technology (S&T) research and early applied development. It seeks to lower performance risk to a manageable level and facilitate transition and funding to capability end-state programs.

White papers may be evaluated at any time after submission and invitations for full proposal submission may occur any time after white paper evaluation. Note that proposal invitations will be limited to available program funds. The Government reserves the right to award any combination of approaches which offer the best overall value to the Government and to oversee any and all processes and approaches once ongoing.

2. Purpose and Research Thrust Areas/Topics

DTRA seeks unclassified, fundamental research across seven major functional C-WMD research thrust areas. Specific research topics that align to one or more thrust areas may be presented in Section 10. Otherwise, white papers and proposals shall be written against the thrust area descriptions. All non-topic-based research ideas, i.e., those submitted to the general Thrust Area description, must be pre-coordinated with the relevant technical POC for each Thrust Area; an e-mail address for each of the DTRA technical POCs for Thrust Areas 1-7 is provided in Section 9. Coordination of research ideas and efforts must be accomplished via these email addresses, except in cases where a topic specifically states that pre-coordination is not required. Pre-coordination must include submission of an abstract (recommend less than 250 words) of the proposed project/effort or a paragraph description of the proposed project/effort to the email address in Section 9. For an effort to be considered pre-coordinated, a reply email with the disposition will be sent to the applicant from the relevant email address in Section 9. Pre-coordination may not be accomplished with email addresses other than those
listed in [Section 9](#). DTRA may not review white papers without prior coordination. Please note that attachments to e-mails may not be reviewed.

DTRA may remove, add, or update topics at any time without notice by publishing an amendment to this Call. Once a topic has closed or been removed via an amendment, white papers responsive to that topic will no longer be accepted for review. DTRA will not provide additional information regarding the posting of future topics, including dates for posting, the potential for a topic to be repeated in out years, the potential for similar topics to be posted, and/or topic details in advance of issuance of an amended Call.

This Call, in addition to any amendments issued in conjunction with this Call, will be posted to the DTRA Submission Website ([www.dtrasubmission.net](http://www.dtrasubmission.net)), DTRA Basic and Fundamental Research Community Portal ([https://www.dtrasubmission.net/portal/](https://www.dtrasubmission.net/portal/)), and to the DTRA website ([www.dtra.mil](http://www.dtra.mil)).

The seven thrust area descriptions are outlined below. Thrust Areas 1-5 are not currently accepting abstracts for pre-coordination.

2.1. **Thrust Area 1—Science of WMD Sensing and Recognition:** The science of WMD sensing and recognition advances fundamental understanding of materials that demonstrate measurable changes when stimulated by radiation or particles from WMD in the environment. This research thrust involves exploration and exploitation of interactions between materials and various photons, molecules, nuclear radiation and/or particles. This research thrust also involves the exploration and exploitation of signatures of these interactions with materials, including those signatures which are actively stimulated. These interactions and the specific form of recognition they provide are used for subsequent generation of information that provides knowledge of the presence, identity, and/or quantity of material or energy in the environment that may be significant. Thrust Area 1 is currently not interested in research focusing on the sensing of explosives or the detection of Improvised Explosive Devices (IEDs). DTRA will not review any non-topic-based Thrust Area 1 white papers without prior coordination of the idea with the Thrust Area 1 e-mail address ([Section 9](#)). Applicants should note that there is extremely limited funding available for Thrust Area 1. White papers will only be encouraged from the coordinated abstracts under very limited circumstances. **Thrust Area 1 is NOT currently accepting abstracts for pre-coordination.**

2.2. **Thrust Area 2—Network Sciences:** The fundamental science of network science results from the convergence of computer, information, mathematical, network, cognitive and social science. This research thrust expands our understanding of physical and social networks and advances knowledge of adversarial intent with respect to the acquisition, proliferation, and potential use of WMD. The methods may include analytical, computational or numerical, or experimental means to integrate knowledge across disciplines and improve rapid processing of intelligence and dissemination of information. DTRA will not review any non-topic-based Thrust Area 2 white papers without prior coordination of the idea with the Thrust Area 2 e-mail address ([Section 9](#)). Applicants should note that there is extremely limited funding available for Thrust Area 2. White papers will only be encouraged from the coordinated abstracts under very limited circumstances. **Thrust Area 2 is NOT currently accepting abstracts for pre-coordination.**

2.3. **Thrust Area 3—Science for Protection:** Fundamental science for protection involves advancing knowledge in physical, biological, and engineering sciences to protect life and life-sustaining resources and systems. Protection includes both passive and active defense against threats. Approaches include hardening of infrastructure and facilities to protect against blast, nuclear events, or other CBRNE effects; protection of personnel, including physical defenses as well as advanced
biological and chemical countermeasures or filtering; fundamental research to improve understanding defenses to non-traditional agents and threats; novel and significant active defense against WMD, including science to support innovative robotics for countering WMD; detecting, identifying and characterizing the origin and spread of CBRNE agents or threats; methods to measure and assess the effects of WMD; new approaches to understand uncertainty and reduce risk; new principles for decontamination of personnel or equipment/facilities, and other mitigation or restoration; and, shielding of systems or networks. DTRA will not review any non-topic-based Thrust Area 3 white papers without prior coordination of the idea with the Thrust Area 3 e-mail address (Section 9). Applicants should note that there is extremely limited funding available for Thrust Area 3. White papers will only be encouraged from the coordinated abstracts under very limited circumstances. **Thrust Area 3 is NOT currently accepting abstracts for pre-coordination.**

2.4. **Thrust Area 4—Science to Defeat WMD:** Fundamental Science for significantly improving energetic materials for use against WMD facilities and systems, for deeper penetration to deny the adversary sanctuary of WMD, for predictable modeling of counter-WMD munitions and simulation of in-theater scenarios with accurate lethality calculations, for minimizing collateral effects when engaging WMD, and for exploiting vulnerable pathways, infrastructure etc. to eliminate the threat of WMD. DTRA will not review any non-topic-based Thrust Area 4 white papers without prior coordination of the idea with the Thrust Area 4 e-mail address (Section 9). Applicants should note that there is extremely limited funding available for Thrust Area 4. White papers will only be encouraged from the coordinated abstracts under very limited circumstances. **Thrust Area 4 is NOT currently accepting abstracts for pre-coordination.**

2.5. **Thrust Area 5—Science to Secure WMDs:** Fundamental science to support securing WMD includes: identification of phenomena that enable significant advancements in support of arms control; environmentally responsible innovative processes to neutralize or dispose of CBRNE materials and components; discovery of revolutionary means to secure components, materials, and weapons, including sciences for more robust nuclear security practices; science to enhance monitoring, compliance, and verification technologies in support of existing, emerging, and new treaties; exploration of principles to improve nuclear test detection and analysis; investigation of fundamental and novel techniques and emerging science areas that support new approaches to developing a strategy for countering WMD development, deployment, or use; forensics; and, studies of scientific principles that lead to novel physical methods to disrupt WMD proliferation pathways. DTRA will not review any non-topic-based Thrust Area 5 white papers without prior coordination of the idea with the Thrust Area 5 e-mail address (Section 9). Applicants should note that there is extremely limited funding available for Thrust Area 5. White papers will only be encouraged from the coordinated abstracts under very limited circumstances. **Thrust Area 5 is NOT currently accepting abstracts for pre-coordination.**

2.6. **Thrust Area 6—Cooperative Counter WMD Research with Global Partners:** Cooperative fundamental research to reduce the global threat of WMD in collaboration with a broad range of global research partners. This Thrust Area involves exploratory basic and applied research that will address opportunities to reduce, eliminate, and counter WMD across the CBRNE spectrum. Efforts in this area will develop strong international relationships which will foster a smooth transition of program ownership to the partnering country. The goal is to improve international collaboration to detect, characterize, and report WMD, and to advance partner nation sustainment through a culture of long-term cooperation and scientific responsibility for such programs. Multidisciplinary, multinational research in science, technology, engineering, and mathematics development will be conducted to
promote transparency through quality research publications and continual dialogue between scientists/engineers and young researchers. DTRA will not review any non-topic-based Thrust Area 6 white papers without prior coordination of the idea with the Thrust Area 6 e-mail address (Section 9).

The Cooperative Biological Engagement Program (CBEP), a component of the DoD Cooperative Threat Reduction (CTR) Program, recognizes the danger to U.S. and global health security posed by the risk of outbreaks of dangerous infectious diseases, whether natural or manmade. Consistent with the national and departmental strategies, CBEP strives to address this risk by promoting best practices in biological safety and security, improving partner country capacity to safely and rapidly detect and report dangerous diseases, and establishing and enhancing international research partnerships. The desired end state for CBEP engagements is the development of sustainable partner country capabilities to:

- Employ responsible bio-risk management best practices and principles,
- Conduct a modern and effective disease surveillance mission,
- Comply with World Health Organization (WHO) International Health Regulations (IHR) and World Organization for Animal Health (OIE) reporting guidelines, and
- Promote the One Health Concept.

The goals of CBEP international research partnerships are to promote transparency through quality research leading to peer-reviewed publications, to sustain scientific and professional dialogue, and to foster an international culture of responsible and ethical conduct in biological research. These partnerships are focused on developing cooperative research between U.S. and global partner academic communities to:

- Improve international collaborations to detect, characterize, and report disease outbreaks,
- Prevent, diagnose, and treat illness,
- Train partner country researchers in the conduct of ethical research, and
- Advance partner country sustenance of global health security initiatives.

Ultimately, the techniques, procedures, and approaches must be sustainable for the partner country, and linked with appropriate training, to promote global health security, reinforce norms of safe and responsible conduct, obtain timely and accurate insight on current and emerging risks, and transform the international dialogue on biological threats.

CBEP research projects are not determined by or limited to specific biological agents, but must be aimed at measurably supporting threat reduction objectives that:

- Secure and consolidate collections and associated research of U.S. Select Agent Pathogens and Toxins to a minimum number of secure facilities,
- Improve partner country biosafety and security (BS&S) standards to prevent sale, theft, diversion, or accidental release of biological weapons (BW) related materials, technology, and expertise,
- Improve disease surveillance by enhancing partner capability to detect, diagnose, and report U.S. select agents and toxins, potential pandemics, and emerging/re-emerging pathogens of security interests,
- Enhance understanding of endemic pathogens to allow differentiation of natural occurring disease
from those occurring by accident or nefarious intent (e.g. bio-terror attacks),

- Facilitate partner country’s/region’s research engagement through robust research collaborations employing state-of-the-art analytical methods,
- Enhance host country capabilities to comply with WHO IHR (2005) and OIE reporting guidelines,
- Ensure developed capabilities are designed to be sustainable within each partner country’s/region’s operating budget, and
- Eliminate BW related infrastructure and technologies.

Examples of CBEP research areas of interest include: Biosurveillance, Pathogen Characterization, Assay Adaptation and Optimization, Microbial Ecology within a Public Health Context, and Preventative Strategies and Countermeasures. Medical countermeasure development (i.e., development of diagnostic tools, vaccines, therapeutics) is supported by many other U.S. government or international agencies and is generally not supported by CBEP; however, research projects may inform medical countermeasure development and support validation and verification testing (e.g., as part of proficiency testing, pilot studies/testing, or exercises, etc.). Additionally, CBEP does not generally support research with common disease agents such as HIV/AIDS, malaria, and tuberculosis where other U.S. agencies have dedicated missions to do so; however, the program may choose to capitalize on opportunities to leverage research on these diseases to further CBEP goals.

CBEP is interested in collaborative research partnerships between U.S. institutions and foreign research partners in any of the following regions: Countries of the Former Soviet Union (FSU) (specifically Armenia, Azerbaijan, Georgia, Kazakhstan, and Ukraine), Africa (specifically East Africa and the Southern African regions), Southeast Asia (including Indonesia, Malaysia, Cambodia, Laos, Thailand, Vietnam, Philippines, Timor-Leste, and Brunei), and Middle Eastern/South Asian countries (including Afghanistan, Pakistan, India, and Iraq). Note that research ideas should be submitted such that the U.S. institution(s) partner with the foreign institution(s) to develop a collaborative research project.

2.7. **Thrust Area 7—Fundamental Science for Chemical and Biological Defense:** Fundamental science for chemical and biological (CB) defense includes science and technology research that advances knowledge in physical and life sciences to defend and counter chemical and biological WMD that could be used against our Nation’s warfighters. Fundamental research efforts enable capabilities such as development of improved detection devices for traditional and nontraditional chemical agents; development of diagnostics for existing and emerging infectious disease threats; increasing knowledge and improved capabilities for development of new or improved medical and material countermeasures to CB threats for both pre- and post-exposure scenarios; enhanced personal protection against, modeling of, prevention of, or decontamination of CB threats; and providing effective elimination strategies via non-kinetic approaches for threat agent destruction, neutralization and/or sequestration. DTRA will not review any non-topic-based Thrust Area 7 white papers without prior coordination of the idea with the Thrust Area 7 e-mail address (Section 9).

3. **Award Information**

Resulting awards from this announcement will be Interagency Agreements/Interagency Orders and/or Military Interdepartmental Purchase Requests (MIPRs). The final number of projects and funds allocated will be determined after proposals are received and evaluated. Awards may range from small dollar value (e.g., ~$25K) up to $1M annually (average award values include both direct and indirect
costs). Awards made under this Call will be made with basic research, applied research, or Cooperative Threat Reduction (CTR) category funds. Funding for participation in this program is highly competitive and the cost of proposed research should strictly be maintained in the award amounts outlined for each topic, if one is provided.

Efforts for Thrust Areas 1-7, including topics associated with these Thrust Areas, may be proposed for up to five (5) years. Awards may be for a base period of one (1) year with four (4) additional years as possible options, a base period of two (2) years with three (3) additional years as possible options, or a base period of three (3) years with two (2) additional years as possible options. Proposals that outline scope and effort for any base and option combination are acceptable.

Subawards may be used to carry out a portion of the research and/or effort. DTRA will review and consider the proposed subawards for all applications on a case-by-case basis.

For submissions made to Thrust Area 6 (to include the Thrust Area 6 topics), there is no limitation on the dollar value of the subaward(s). Applicants are reminded that priority is given to projects with the main locus of activity in the region-of-interest; budgets should be allocated accordingly. Preference will be given to proposals where the subaward component to the region-of-interest represents more than half of the award value (as measured in U.S. dollars).

The Government will not provide any hardware or software to execute the proposed research. The Government reserves the right to fund all, some, or none of the proposals submitted; may elect to fund only part of any or all proposals; and may incrementally or fully fund any or all awards under this Call. All awards are subject to the availability of funds.

4. Eligibility

The following entities are eligible to submit white papers and proposals to this Call:

- Federal laboratories to include DoD, Department of Energy (DoE) (National Labs), DHS (NBACC, PIADC), HHS (CDC, NIH), and USDA (ARS, APHSIS).
- DoD degree-granting academic institutions that are Federal government organizations, e.g. United States Military Academy at West Point, The Air Force Institute of Technology, etc.
- DoD-sponsored FFRDCs specified in DoD FAR Supplement 235.017-1 (http://farsite.hill.af.mil/vfdfara.htm and click on ‘DFARS Part 35’). DoD-sponsored FFRDCs shall review FAR 35.017(a)(2) to ensure compliance with the requirement for an Organizational Conflict of Interest (OCI) Risk Mitigation Plan that shall accompany the proposal submission.1
- DoE-sponsored FFRDCs provided that authorization is obtained from the DoE sponsor. DoE-sponsored FFRDCs shall review FAR 35.017(a)(2) to ensure compliance with the requirement for an OCI Risk Mitigation Plan that shall accompany the proposal submission.1 In accordance with FAR 17.503(e), DoE Order 481.1C and DoE Acquisition Regulation DEARS 970.1707-3, DoE-sponsored FFRDCs must provide a copy of the written certification from the DoE sponsor authorizing its performance of the proposed effort. The DoE sponsor must provide written

1 The conflict of interest policy in DFARS 235.017-1 pertains to personal conflicts of interest by board members of FFRDCs and not organizational conflicts of interest.
certification that the proposed work:

1) is consistent with or complimentary to missions of DoE and the facility to which the work is to be assigned,
2) will not adversely impact programs assigned to the facility, and
3) will not create a detrimental future burden on DoE resources.

- National Aeronautics and Space Administration (NASA)-sponsored FFRDCs provided that authorization is obtained from the NASA sponsor. NASA-sponsored FFRDCs shall review FAR 35.017(a)(2) to ensure compliance with the requirement for an OCI Risk Mitigation Plan that shall accompany the proposal submission.¹

There is no limit on the number of white papers and invited proposals that an applicant Principal Investigator (PI/Co-PIs) may submit in response to this Call.

5. Submission Information

5.1. General Application and Submission Information. This Call contains all information required to submit a white paper and invited proposal. Submissions for this Call will be conducted in two phases. Phase I is for receipt of white papers. Phase II is for receipt of invited proposal applications. Invitation to the Phase II proposal submission will be based on the evaluation results of the Phase I white paper and the availability of funds.

The predominance of efforts, including all submissions to the thrust areas and some submissions to topics posted in Section 10, as noted within the Thrust Area, must be coordinated with the relevant technical point of contact (POC) for the appropriate thrust area prior to submission of a white paper; an e-mail for the DTRA technical POCs for Thrust Areas 1-7 are provided in Section 9. Applicants should note that Thrust Areas 1-5 are not currently accepting abstracts for pre-coordination. Coordination of research ideas and efforts must be accomplished via these email addresses, except in cases where a topic specifically states that pre-coordination is not required, and includes submission of an abstract (recommend less than 250 words) of the proposed project/effort or a paragraph description of the proposed project/effort to the email address in Section 9 and a reply email from the relevant email address in Section 9 with the disposition to the applicant. Pre-coordination may not be accomplished with email addresses other than those listed in Section 9. DTRA will not review white papers without prior coordination. Please note that attachments to e-mails may not be reviewed.

Applicants should note that there is extremely limited funding available for the general thrust areas. White papers will only be accepted from the coordinated abstracts under very limited circumstances. Topics may be posted in Section 10 that may not require pre-coordination of an abstract. Please review the topics carefully.

For convenience, Microsoft (MS) Word and MS PowerPoint templates for portions of the Phase II proposal submissions are provided on the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/) for applicant use. Applicants are encouraged to use the templates for preparing submissions; however, use of the templates is not required. Note: there is not a template available for the white paper.

All applicants interested in submitting white papers and proposals must register on the DTRA proposal submission website, www.dtrasubmission.net, prior to submission of a white paper(s) and proposal(s). Each institution may establish procedures for the management of registration and submission of white
papers and proposals. Detailed registration instructions are available at the website. Failure to register in accordance with instructions will prevent submission of the required documents and render applicants ineligible for participation in this Call. Prior registration at any other proposal submission site other than at www.dtrasubmission.net does not fulfill registration requirements for participation in this Call.

White papers and proposals must be submitted electronically through the DTRA proposal submission website, www.dtrasubmission.net. Do not submit any RESTRICTED or CLASSIFIED materials to the Call or to the proposal submission website. All submissions must be completely UNRESTRICTED and UNCLASSIFIED; submissions must not contain For Official Use Only (FOUO) or Official Use Only (OUO) information or be marked as such. Unclassified, unrestricted proposals submitted by any means other than the DTRA proposal submission website (e.g., hand-carried, postal service mail, commercial carrier, or e-mail) will not be considered. Detailed submission instructions are available at the website.

Applicants are responsible for ensuring compliant and final submission of their white papers and/or invited proposals, and can verify the submission of the white paper and/or proposal package with the electronic receipt that appears on the screen following compliant submission of a proposal to the DTRA proposal submission website.

Using the DTRA proposal submission website, all applicants must prepare cover sheets for each Phase I white paper and invited Phase II proposal submitted. All data point requirements must be completed in every cover sheet. Once the cover sheet is saved, the system will assign a unique proposal number for each Phase I submission and a different unique proposal number for each invited Phase II submission. Cover sheets may be edited as often as necessary until the white paper and/or proposal is submitted.

White papers and proposals may be withdrawn by written notice received at any time before award. Withdrawals are effective upon receipt of notice by the Program Coordinator via the e-mail address listed in Section 9.

5.2. Cover Sheet Information. The following information is required to complete a Cover Sheet for each white paper and proposal:

- Thrust Area or Topic Number under which white paper/proposal is being submitted for consideration
- Title of proposed effort, which must be different than the thrust area/topic title
- Applicant Institution name and address (this is based on the registrant submitting the proposal, and should be the institution, not the individual)
- Cost per year of performance
- Information on other submissions of same proposed effort
- Contact Information for PI and Business Points of Contact – Name, Title, Phone, Fax and E-mail
- Identification of proprietary information included in proposal submission (page numbers)
- Technical Abstract. The project abstract should be concise (less than 250 words) and provide a summary of the proposed work and demonstrate relevance to the topic being addressed. The abstract should not contain any proprietary data or markings.
• Key Words/Phrases (limited to 8 key words)

The Cover Sheet is automatically populated with the following information based on the registration process:

• DUNS, CAGE and Tax ID numbers, as entered during registration (cannot be changed)
• Applicant, as entered during registration (cannot be changed)
• Address (can be updated)

If multiple proposals are being submitted by the same institution, separate cover sheets must be generated for each white paper and invited proposal as the required documents must be uploaded with the associated cover sheet. All documents submitted to the DTRA proposal submission website are considered works in progress and are not eligible for evaluation until the applicant submits the final proposal package for consideration. Applicants are responsible for ensuring compliant and final submission of their white papers and proposals; applicants can verify the submission of the white paper and proposal package with the electronic receipt that appears on the screen following submission of a white paper and proposal to the DTRA proposal submission website.

The white paper and most parts of the proposal must be uploaded in a Portable Document File (PDF) format. The cost proposal portion of the proposal must be uploaded in MS Excel. Files must not exceed 2 Megabytes of storage space (uncompressed). Movie and sound file attachments or other additional files will not be accepted. Perform a virus check before uploading proposal files. If a virus is detected it may cause rejection of the file. Uploaded files must not be password protected or encrypted.

DTRA will not review any of the following:

• White papers that are not pre-coordinated as required
• White papers that attempt to address multiple thrust areas/topics.
• White papers that are submitted to topics that have been removed.
• Proposals for Phase II submissions that were not invited.

5.3. Phase I White Paper Submission and Content. Interested applicants are required to submit a four-page white paper. The white paper itself should provide sufficient information on the research being proposed (e.g., the hypothesis, theories, concepts, approaches, data measurements, and analysis, etc.) to allow for an assessment by a technical expert.

Any pages submitted for the white paper that exceed the limit of four pages will not be read or evaluated. References may be provided at the discretion of the applicant but will be considered as part of the four-page limit. A page is defined as 8½ x 11 inches, single-spaced, with one-inch margins in type not smaller than 12 point Times New Roman font. The thrust area/topic with the name should be included as a header on the white paper and in the text of the white paper. The white paper must be provided in portrait layout.

At minimum, the white paper should address the following:

• Potential scientific impact to provide greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts, including how the research contributes to the C-WMD science needs outlined in the thrust area/topic.
• The impact of the research on C-WMD science must be clearly delineated.

• Cost estimate by year and total dollars required to accomplish the research as presented in the white paper (no details or breakout of costs is required). Note that dollar values in this Call include both direct and indirect costs.

• Potential team and management plan, including details on student involvement.

• Multidisciplinary white papers should carefully detail each of the institutions/departments involved and the contribution that will be made by each of the investigators.

• Do NOT include corporate or personnel qualifications, past experience, or any supplemental information with the white paper.

• Thrust Area 6 white papers must also include a description of the extent and duration of the relationship/collaboration between the universities/institutes/entities, and/or scientists.

5.4. Phase I White Paper Re-Submission and Content. On a limited basis a second white paper may be submitted without pre-coordination of an abstract. These re-submissions will be based on the review of the original white paper and will be allowed when changes to the project scope, technical approach, and/or cost are envisioned for any potential full proposals. Revised white papers must conform to the standards for the white papers detailed in Section 5.3. At minimum, the revised white paper should address the issues and questions detailed in the debrief summary.

5.5. Phase II Full Proposal Submission and Content. The full proposal must be prepared in three separate volumes: Technical Proposal, Cost Proposal, and Supplemental Information.

Technical Proposal. The technical proposal must not exceed 20 pages (including references). If the proposal exceeds 20 pages, only the first 20 pages will be reviewed. A page is defined as 8½ x 11 inches, single-spaced, with one-inch margins in type not smaller than 12 point Times New Roman font. The proposal must be provided in portrait layout. A template for the technical proposal format may be found online at the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/) (MS Word format).

The technical proposal must include the following components:

• **Abstract.** The project abstract should be concise (less than 250 words) and provide a summary of the proposed work and demonstrate relevance to the topic being addressed. The abstract should not contain any proprietary data or markings.

• **Objective.** A clear and concise objective of the proposed project.

• **Background.** Provide the necessary technical and scientific background to support the scientific and/or technical merit of the proposed project.

• **Programmatics.** Describe your organization’s management plan for the proposed project; list supporting and collaborating centers, and the roles/responsibilities of each identified subawardee supporting the project. Authors of multidisciplinary proposals must take great care to clearly outline the scientific contribution from each investigator.

Thrust Area 6 narratives must also describe the extent and duration of the relationship/collaboration between the universities/institutes/entities and/or scientists. Teams with pre-existing collaborative research relationships and those which propose to establish new collaborations will be considered, provided teams can supply documentation to demonstrate that an
operational framework exists to support the proposed work.

- **Relevance.** Describe the relevance of the proposed project in terms of advancing the state of the science and the anticipated scientific impact on capabilities to potentially reduce, eliminate, counter, provide greater knowledge or understanding of the threat, and mitigate the effects of WMD fundamental aspects of phenomena and of observable facts.

- **Credentials.** Describe the PI’s qualifications and the organization’s qualifications to perform the proposed work. Summarize the credentials of the primary performing center, and supporting academic and industrial partners to perform the work. Describe specific examples of equipment and/or facilities available to perform the proposed work. Focus on information directly relevant to the proposed work.

- **Work to be Performed.** Provide details of the work to be performed by task and subtask. Tasks must be grouped by project year; base and option years should be clearly labeled. Additional details that are required include the following:
  - **Sample Repository.** Thrust Area 6 narratives ONLY must also clearly identify how the applicant plans to maintain samples collected during the proposed research effort, along with relevant metadata, for at least 12 months after the project end date. The format for the Sample Repository is at the discretion of the applicant.
  - **Protection of Human Subjects.** For full discussion, see Section 5.9. If the proposed research does involve human subjects or materials, applicants are asked to: a) justify the use of human subjects, b) outline the human use, and c) include the source of the human subjects or materials involved in the research. Applicants shall submit written evidence, to include a provisional protocol number and Institutional Review Board (IRB) point of contact information, that a human use protocol has been submitted to, and is pending approval by, a qualified IRB. Further information may be required if the proposal is successful.
  - **Animal Use.** For full discussion, see Section 5.10. If the proposed research involves animal use, applicants are asked to justify the use of animals. Any proposals involving animal studies or animal work must include detailed information on the animal protocols to be used and verify the location where the studies will be conducted. Animal studies are subject to review and approval for safety and adherence to regulations. Applicants shall submit with the full proposal package written evidence, to include a provisional protocol number and Institutional Animal Care and Use Committee (IACUC) point of contact information, that a vertebrate animal use protocol has been submitted to, and is pending approval by, a qualified IACUC. Further information may be required if the proposal is successful.
  - **Performance Schedule.** Provide a table of tasks and sub-tasks and the duration of performance of each in a Gantt or other suitably formatted chart.
  - **References.** List any relevant documents referenced.

**Cost Proposal.** The cost proposal must include two separate documents: a cost summary and a detailed cost portion. The cost proposal must also include detailed cost submissions for all subcontractors and consultants.

The cost summary is a form that captures the total costs by year (e.g., direct labor, fringe benefits, subcontract costs, domestic travel costs, foreign travel costs, tuition costs, direct materials and supply costs, direct equipment costs, publication costs, other direct costs and indirect costs). This summary
includes total numbers only; supporting detail is included in the detailed cost proposal. A template for the cost summary may be found online at the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/).

The detailed cost proposal will include the following three sections: (1) tabular cost breakdown by cost element and SOW tasks based on 12-month increments; (2) narrative to support the requirements in each cost element; and (3) subcontractor cost breakdown, if applicable. Applicant format is acceptable provided it includes all required elements. The cost proposal shall include the same level of detail for each subcontractor or consultant as required of the prime applicant. The exception is any proprietary subcontract or consultant cost data (e.g., indirect rates) that may be submitted directly to the Government at time of negotiation.

The detailed cost proposal should include the following information:

- Individual labor categories or persons (principal investigator, graduate students, etc.), with associated labor hours and unburdened labor rates.
- Benefits and labor burden costs.
- Subcontract costs and type (the portion of work to be subcontracted and rationale). Submit a detailed description of the proposed subcontracted effort(s) and the projected cost(s). Note that separate cost proposals should be provided and incorporated into Volume II for any subcontracts.
- Consultant fees (indicating daily or hourly rate) and travel expenses and the nature and relevance of such costs. Note that separate cost proposals should be provided and incorporated into Volume II for any consultants.
- Travel costs and the relevance to stated objectives; number of trips, destinations, duration, if known and number of travelers per trip. Travel cost estimations should be based on the U.S. Joint Travel Regulations (JTR).

Applicants shall plan and budget for travel to accommodate the two meetings outlined as follows:

- National/International Conferences/Workshops/Symposia: Applicants are strongly encouraged to attend a nationally/internationally recognized conference, workshop, or symposium in the field of research each calendar year (1 at minimum). Research should be presented as soon as adequate data are available to support posters and presentations. Conferences, workshops, and/or symposia should be attended by the PI and students supporting the research, as appropriate.
- Annual Technical Review: Applicants will plan to attend an annual technical program review meeting. For planning purposes assume that the review will be for five days and will be held in Northern Virginia.
- Publication and report costs.
- Estimate of material and operating costs.
- Cost of equipment, based on most recent quotations and itemized in sufficient detail for evaluation. Clearly delineate any computer or IT equipment purchases.
- Communications and publications costs not included in overhead.
- Other Direct Costs.
• Indirect costs.

Note that any dollar values detailed for average award amounts in this Call include both direct and indirect costs. The detailed cost proposal does not have a page limit and may be provided in the applicant’s preferred format. The cost summary and the detailed cost proposal must be uploaded as separate MS Excel files.

**Supplemental Information.** The supplemental information must consist of the following individual PDF uploads or as a fillable field, as noted:

1) **Quad Chart:** A quad chart for the effort must be uploaded. The quad chart must be presented on 1 page. The quad chart must not contain any proprietary data or markings. The quad chart must be provided in landscape layout. A [template](https://www.dtrasubmission.net/portal/) for the quad chart format may be found online at the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/) (MS PowerPoint format). The inclusion of the DTRA logo is not required.

2) **SOW:** The SOW does not have a page limit, but should be approximately 3-5 pages in length for incorporation into an award document. The SOW should not contain any proprietary data or markings. Pages should be numbered and the initial page should have a date (document date) shown under the title (the title of the SOW should match that of the proposal). The SOW must be provided in portrait layout. A template for the SOW format may be found online at the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/) (MS Word format).

The proposed SOW must accurately describe the research to be performed. The proposed SOW must also contain a summary description of the technical methodology as well as the task description, but not in so much detail as to make the SOW inflexible. The SOW format/guidance is as follows:

- **Objective:** Brief overview of the specialty area. Describe why the research is being pursued and what knowledge is being sought.

- **Scope:** Include a statement of what the SOW covers including the research area to be investigated, objectives/goals, and major milestones and schedule for the effort.

- **Background:** The applicant must identify appropriate documents, including publications that are applicable to the research to be performed. This section includes any information, explanations, or constraints that are necessary in order to understand the hypothesis and scientific impact on capabilities needed to reduce, eliminate, and counter the threat, and also mitigate the effects of WMD. It may also include previously performed relevant research and preliminary data.

- **Tasks/Scientific Goals:** This section contains the detailed description of tasks which represent the research to be performed that are contractually binding. Thus, this portion of the SOW should be developed in an orderly progression and presented in sufficient detail to establish the methodology and feasibility of accomplishing the overall program goals. The work effort should be segregated by performance period for all tasks to be performed and anticipated milestones realized in that year (e.g., Year 1, Year 2, etc., should be detailed separately). Identify the major tasks in separately numbered sub-paragraphs. Each major task should delineate, by subtask, the research to be performed by year and number each task using the...
decimal system (e.g., 4.1, 4.1.1, 4.1.1.1, 4.2, etc.). The sequence of performance of tasks and achievement of milestones must be presented by project year and task in the same sequence as in the Project Narrative/Technical Proposal. The SOW must contain every task to be accomplished to include a detailed schedule.

The tasks must be definite, realistic, and clearly stated. Use “the awardee shall” whenever the work statement expresses a provision that is binding. Use “should” or “may” whenever it is necessary to express a declaration of purpose. Use active voice in describing work to be performed. Do not use acronyms or abbreviations without spelling out acronyms and abbreviations at the first use; place the abbreviation in parenthesis immediately following a spelled-out phrase. If presentations/meetings are identified in your schedule, include the following statement in your SOW: “Conduct presentations/meetings at times and places specified in the grant schedule.”

- **Deliverables:** A template for the SOW format may be found online at the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/) (MS Word format). The SOW must include the following deliverables:
  - Annual Technical Review: Awardees will attend an annual technical program review meeting.
  - Annual Research Performance Progress Report(s): Annual reports will be due no later than 1 July of each year (or 12 months after award for 1 year base awards). Awards effective after 31 January will not require an Annual Report until 1 July of the following year. DTRA will provide instructions on or about 1 May of each year on how the report is to be submitted. Templates and specific instructions will be provided each year in advance of the submission deadline.

The Annual Report is not a cumulative report. The first Annual Report shall only include actions that occurred from the Period of Performance start date up to submission of the first Annual Report. Each subsequent report shall only include actions that occurred during the 12-month period following the previous year’s Annual Report.

In brief, awardees should plan to report on the following information in the annual Research Performance Progress Report: Accomplishments, Products, Participants and Other Collaborating Organizations, Impact, and Changes/Problems.

- Annual Quad Chart(s): An updated quad chart must be submitted annually. A template will be provided each year in advance of the submission deadline (1 July).
- Annual Metrics: Metrics must be submitted annually. DTRA will provide instructions each year in advance of the submission deadline (1 July). Note that the metrics are not cumulative. The first submission shall only include actions that occurred from the Period of Performance start date up to submission deadline. Each subsequent report shall only include actions that occurred during the 12-month period following the previous year’s submission.
• Research Performance Final Report: A comprehensive final technical report is required. The draft document is required forty-five (45) days prior to the end of the Period of Performance and the final document is required ninety (90) days after the expiration or termination of the award. The structure of the report will be provided by DTRA in advance of the draft deadline. In brief, it must document and transition the results of the effort into the DTRA and DoD applied research community. Standard Form (SF) 298, Report Documentation Page, must be used. Item 13 of the SF-298 should contain a 100 to 200 word abstract summarizing technical progress during the reporting period. The SF-298 may be found on the Internet at: http://www.gsa.gov/portal/forms/download/116146. The final report will always be sent to the Defense Technical Information Center (DTIC) and unclassified reports may be made available to the public through the National Technical Information Service (NTIS).

• Final Metrics: A final metrics submission is required. A template and specific instructions will be provided in advance of the submission deadline. The final metrics file should be submitted along with the Final Technical Report. The fields contained in the final metrics file are analogous to those of the annual submissions. The final metrics file shall contain only data from the last annual reporting period until the end of the award’s funded Period of Performance.

• Invention Reports: Invention reports must be filed annually due no later than 1 July of each year. The recipient shall use DD Form 882, Report of Inventions and Subcontracts in accordance with the published instructions for the form IF the awardee has a reportable event. Negative reports are not required. The submission of the DD Form 882 is required at the conclusion of all awards.

• Thrust Area 6 proposals require several additional items be included in the SOW. These items are as follows:
  • Submission of annual sample repository information using any format deemed appropriate by the applicant.
  • Access to all samples collected and data generated during the course of the project for at least 12 months after the project end date.

3) Other Supplemental Information (submitted as a single PDF upload):
   • For FFRDCs, a statement of any potential OCI, or a confirmation of no conflicts, must be provided. For DoE-sponsored FFRDCs, the DoE sponsor written certification must be included.
   • A statement of Intangible Property Assertions.
   • A statement outlining any current and pending support related to the proposed effort must be entered. This information must be included for each investigator listed in the proposal. This statement requires that each investigator specify all grants, contracts, and other awards through which he or she is currently receiving or may potentially receive financial support.

4) Authorized Offeror Personnel (fillable field): Applicants must include the name, title, mailing address, telephone number, fax number, and e-mail address of the company and business point of contact regarding decisions made with respect to the applicant and who can obligate the proposal contractually. Also, identify those individuals authorized to negotiate with the Government.
5) **Supporting Documentation (For Thrust Area 6 proposals ONLY—both general Thrust Area 6 proposals and topics that align to Thrust Area 6):** Applicants **must** submit documentation that demonstrates an operational framework to support the proposed work.

- Specific identification of foreign Principal Investigators (PIs) and number of job title for other members of the foreign research team. The CVs for the foreign PI(s) should be included.

- Detailed description of the relationship between the proposed research project and current research efforts at the foreign entity.

- Description of facilities and any other evidence of suitability of foreign collaborators and sites. In the event that the foreign research component will involve human and/or other vertebrate animal use, appropriate facilities compliance and certifications documents must be provided.

- Foreign PI letter of collaboration describing, at minimum, the suitability of the proposed work with respect to ongoing research efforts at the foreign institution, merit of the proposed collaboration, and the expected mutual benefits.

6) **Protocol Risk Assessment Tool (PRAT) (For Thrust Area 6 proposals ONLY—both general Thrust Area 6 proposals and topics that align to Thrust Area 6):** Applicants **must** download the PRAT from the DTRA Basic and Fundamental Research Community Portal (https://www.dtrasubmission.net/portal/) and complete it in its entirety for each foreign institution participating in the project. Additional instructions for completing the PRAT may be found within the file. The completed PRAT file(s) should be emailed as a Portable Document File (PDF) format to HDTRA1-FRCWMD-C@mail.mil within two (2) weeks of the full proposal submission. Do not attempt to upload the PRAT to the submission site.

5.6. **Phase II Full Proposal Re-Submission and Content.** A revised proposal may be requested based on the review of the original proposal. Revised proposals will be requested when changes to the project scope, technical approach, and/or cost are required before the proposal could be further considered for an award. Applicants whose proposals are of interest to DTRA may be contacted to provide additional information or to make requested revisions prior to the final decision on funding. This request for further information may include revised budgets or budget explanations, revised SOWs, and other information, as applicable, to the proposed award. Applicants who are not responsive to Government requests for information in a timely manner, defined as meeting Government deadlines established and communicated with the request and not making satisfactory updates as requested, may be removed from award consideration. Applicants may also be removed from award consideration if the applicant and the Government fail to negotiate mutually agreeable terms within a reasonable period of time.

Re-submissions should be made in accordance with the instructions provided in the notification email. Proposal revisions must conform to the original submission requirements as detailed in **Section 5.5.**

All submissions must be completely UNRESTRICTED and UNCLASSIFIED; submissions must not contain FOUO or OUO information or be marked as such.

5.7. **Marking of White Paper and Full Proposal for Disclosure of Proprietary Information other than to the Government.** The white paper/proposal submitted in response to this Call may contain technical and other data that the applicant does not want disclosed to the public or used by the Government for any purpose other than proposal evaluation. Public release of information in any white paper/proposal submitted will be subject to existing statutory and regulatory requirements.

If proprietary information which constitutes a trade secret, proprietary commercial or financial
information, confidential personal information, or data affecting the national security, is provided by an applicant in a white paper/proposal, it will be treated in confidence, to the extent permitted by law, provided that the following legend appears and is completed on the front of the white paper/proposal: “For any purpose other than to evaluate the white paper/proposal, this data shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part, provided that if an award is made to the applicant as a result of or in connection with the submission of this data, the Government shall have the right to duplicate, use or disclose the data to the extent provided in the agreement. This restriction does not limit the right of the Government to use information contained in the data if it is obtained from another source without restriction. The data subject to this restriction is contained in page(s) _____ of this white paper/proposal.”

Any other legend may be unacceptable to the Government and may constitute grounds for removing the proposal from further consideration without assuming any liability for inadvertent disclosure.

The Government will limit dissemination of properly marked information to within official channels. In addition, the pages indicated as restricted must be marked with the following legend: “Use or disclosure of the white paper/proposal data on lines specifically identified by asterisk (*) are subject to the restriction on the front page of this white paper/proposal.”

The Government assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.

In the event that properly marked data contained in a white paper/proposal submitted in response to this Call is requested pursuant to the Freedom of Information Act (FOIA), 5 U.S.C. § 552, the applicant will be advised of such request and, prior to such release of information, will be requested to expeditiously submit to DTRA a detailed listing of all information in the white paper/proposal which the applicant believes to be exempt from disclosure under the Act. Such action and cooperation on the part of the applicant will ensure that any information released by DTRA pursuant to the Act is properly identified.

By submission of a white paper/proposal, the applicant understands that proprietary information may be disclosed outside the Government for the sole purpose of technical evaluation. The Program Coordinator will obtain a written or electronically signed agreement from the evaluator that proprietary information in the white paper/proposal will only be used for evaluation purposes and will not be further disclosed or utilized.

5.8. Export Control Notification. Applicants are responsible for ensuring compliance with any export control laws and regulations that may be applicable to the export of and foreign access to their proposed technologies. Applicants may consult with the Department of State with any questions regarding the International Traffic in Arms Regulation (ITAR) (22 CFR Parts 120-130) and/or the Department of Commerce regarding the Export Administration Regulations (15 CFR Parts 730-774).

5.9. Protection of Human Subjects. If the proposed research involves human subjects or materials, applicants are asked to: a) justify the use of human subjects, b) outline the human use, and c) include the source of the human subjects or materials involved in the research. As a condition precedent to receipt of DTRA funding, applicants must ensure that the basic rights and welfare of human subjects are protected. Applicants shall submit with the full proposal package written evidence, to include a provisional protocol number and Institutional Review Board (IRB) point of contact information, that a human use protocol has been submitted to, and is pending approval by, a qualified IRB. Further information may be required if the proposal is successful.
All research under any award made under this Call involving human subjects must be conducted in accordance with 32 CFR 219, 10 U.S.C. § 980, and DoD Instruction 3216.02, and, as applicable, 21 CFR parts 11, 50, 56, Good Clinical Practice, the ICH, as well as other applicable federal and state regulations. Awardees must be cognizant of and abide by the additional restrictions and limitations imposed on the DoD regarding research involving human subjects, specifically as regards vulnerable populations (32 CFR 219 modifications to subparts B-D of 45 CFR 46), recruitment of military research subjects (32 CFR 219), and surrogate consent (10 U.S.C. § 980).

DTRA Directive 3216.01 of June 9, 2010, modified March 18, 2015, established the DTRA Human Subjects Protection Program, set forth the policies, defined the applicable terms, and delineated the procedures necessary to ensure DTRA compliance with federal and DoD regulations and legislation governing human subject research. The regulations mandate that all DoD activities, components, and agencies protect the rights and welfare of human subjects of study in DoD supported research, development, test and evaluation, and related activities hereafter referred to as “research”. The requirement to comply with the regulations applies to new starts and to continuing research.

The DTRA Directive requires that research using human subjects may not begin or continue until the DTRA Research Oversight Board (ROB) has reviewed and approved the proposed protocol. Contractors and subcontractors are required to submit a valid federal assurance for their organization (institution, laboratory, facility) that has been issued by either DoD or the Department of Health and Human Services, and documentation of review of proposed protocols by the local IRB to include consent forms for any planned research using human subjects to the DTRA ROB for its review through the contracting officer’s representative (if assigned) or the contracting officer. The ROB review is separate from, and in addition to, local IRB review.

A study is considered to involve human research subjects if: 1) there is interaction with the subject (even simply talking to the subject qualifies; no needles are required); and 2) if the study involves collection and/or analysis of personal/private information about an individual, or if material used in the study contains links to such information.

Written approval to begin research or to subcontract for the use of human subjects under the proposed protocol will be provided in writing from the DTRA ROB, through the contracting officer. Both the contractor and the Government must maintain a copy of this approval. Any proposed modifications or amendments to the approved protocol or consent forms must be submitted to the local IRB and the DTRA ROB for review and approval. Examples of modifications/amendments to the protocol include, but are not limited to:

- a change of the Principal Investigator;
- changes in duration or intensity of exposure to some stimulus or agent;
- changes in the information requested of volunteers, or changes to the use of specimens or data collected; or
- changes in perceived or measured risks or benefits to volunteers that require changes to the study.

Research pursuant to such modifications or amendments must not be initiated without IRB and ROB approval except when necessary to eliminate apparent and immediate hazards to the subject(s).

Research projects lasting more than one year require IRB review at least annually, or more frequently as required by the responsible IRB. The contractor or subcontractor must provide documentation of continued IRB review of protocols for ROB review and approval in accordance with the Contract Data
Requirements List. Research changes must be reviewed by the IRB and ROB in advance unless necessary to eliminate apparent and immediate hazards to the subject(s).

A clause regarding human subjects research will be included in all contracts involving human subjects research. Non-compliance with any provision of this clause may result in withholding of payments under the contract pursuant to the contract’s payments clause(s) and/or contract termination pursuant to the contract’s termination clause(s). The Government shall not be responsible for any costs incurred for research involving human subjects prior to protocol approval by the ROB.

5.10. Animal Use. If the proposed research involves the use of live nonhuman vertebrate animals, applicants are required to justify the use of animals by providing detailed information on the proposed animal use, to include the proposed species and number of animals planned, along with the location(s) where the animal study(ies) is planned. Additional information will be required if the proposal is selected for award subject to successful negotiations. The Animal Care and Use Review Office (ACURO), a component of the USAMRMC Office of Research Protections (ORP), must review and approve all animal use prior to the start of working with animals. Therefore, Principle Investigators will be required to complete and submit the animal use appendix titled “Research Involving Animals”, after award of the procurement instrument, which is available on the ACURO website (http://mrmc.amedd.army.mil/index.cfm?pageid=research_protections.acuro). Allow 2 to 4 months for regulatory review and approval processes for animal studies. Applicants are to build this review time into their project schedules.

DoD Instruction 3216.01, dated September 13, 2010, provides policy and requirements for the use of animals in DoD-funded research based on Army Regulation (AR) 40-33. The DoD definition of animal is any live nonhuman vertebrate. All proposals that involve the use of animals must be in compliance with DoD Instruction 3216.01 and AR 40-33. DTRA requires that research using animals not begin or continue until the ACURO has reviewed and approved the proposed animal use. For animals, the provisions include rules on animal acquisition, transport, care, handling, and use in: (i) 9 CFR parts 1-4, Department of Agriculture rules that implement the Laboratory Animal Welfare Action of 1966 (U.S.C. 2131-2156); and (ii) the “Guide for the Care and Use of Laboratory Animals,” National Institutes of Health Publication No. 86-23.

5.11. Biological Defense Research Program (BDRP) Requirements: BioSurety and Select Agent Use. Proposals must specify what Select Agent work will be conducted at the applicant’s facility and what Select Agent work will be performed in other facilities. Proposals also must provide the source of the Select Agent(s), any appropriate registration information for the facilities, and specify the Laboratory Bio-safety Level. All Select Agent work is subject to verification of information and certifications. Further information may be required if the proposal is successful.

For those institutions in which PI’s are conducting research with Bio-safety Levels 3 and 4 material, a Facility Safety Plan must be prepared and made available during the project award phase in accordance with 32 CFR 626.18. For grants awarded to foreign institutions, you must follow either local or U.S. laws (as stated above) depending on which laws provide stronger protection. (DTRA requires that research using Select Agents not begin or continue until DTRA has reviewed and approved the proposed agent use. See URL: https://www.gpo.gov/fdsys/pkg/CFR-2002-title32-vol3/pdf/CFR-2002-title32-vol3-sec626-18.pdf for a copy of 32 CFR 626.18, Biological Defense Safety Program.)

For projects that will employ the use of chemical agents, either neat agent or dilute agent, the applicant must provide approved Facility Standard Operating Procedures that conform to Federal, State and local regulations and address the storage, use and disposition of these chemical materials.
5.12. Dual-Use Potential. In accordance with National Science Advisory Board for Biosecurity (NSABB) recommendations, DTRA will not support research that, based on current understanding, can reasonably be anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security. Research involving select agents and toxins is within scope of the DTRA mission; however, the use of select agents and toxins in certain experimental categories is considered “dual-use research of concern” (DURC) according to U.S. policy (http://www.phe.gov/s3/dualuse/Documents/us-policy-durc-032812.pdf). Proposals that contain DURC will not be funded. Dual-use potential will be assessed based on application of the following criteria:

- Use of select agents or toxins. This factor evaluates whether the proposed research involves use of one or more select agents or toxins [as identified by the Select Agent Program under Federal Law (7 C.F.R. part 331, 9 C.F.R. part 121, and 42 C.F.R. part 73)] which pose significant risk of deliberate misuse with potential for mass casualties or devastating effects to the economy, critical infrastructure, or public confidence.

- Scope of proposed experiments. This factor evaluates whether the proposed research involves experiments that will produce, aim to produce, or is reasonably anticipated to produce: (a) Enhanced harmful consequences of the agent or toxin; (b) Disruption of immunity or effectiveness of an immunization against the agent or toxin without clinical or agricultural justification; (c) Conferred resistance by the agent or toxin to clinically or agriculturally useful prophylactic or therapeutic interventions against the agent or toxin, or facilitated ability to evade detection methodologies; (d) Increased stability, transmissibility, or dissemination ability of the agent or toxin; (e) Altered host range or tropism of the agent or toxin; (f) Enhanced susceptibility of a host population to the agent or toxin; or (g) Eradicated or extinct select agents or toxins.

6. Submission Dates and Times

Coordination of abstracts may be accomplished at any time that this Call is in effect, unless otherwise stated as part of a specific topic. Once an applicant has been notified that a white paper is welcomed, the white paper should be submitted within 60 days. If the white paper is not submitted within 60 days, DTRA reserves the right to require the applicant to re-initiate the process with another abstract coordination. White papers may be submitted anytime this Call is in effect (as long as it occurs within the 60 day window following pre-coordination of the abstract), unless otherwise stated as part of a specific topic. White papers may be evaluated at any time after submission and invitations for full proposal submission may occur any time after white paper evaluation. Note that proposal invitations may be limited to available program funds.

The due date for the Phase II invited proposal submissions will be provided in the letter of invitation. The applicant will not be allowed less than 45 days to prepare a full proposal submission; there is no penalty for early submissions. An extension for submission of the Phase II proposal submission may be requested by emailing the administrative email address in Section 9 prior to the deadline for the proposal submission; extensions for topic-based proposal submissions will be considered under extremely limited circumstances. Full proposals may be evaluated at any time after submission. Proposals may not be reviewed if they are received after the deadline. Please note 15 U.S.C. 260a establishes daylight saving time as the standard time during the daylight saving period.

Applicants are responsible for submitting invited proposals so as to be received by the DTRA submission site by the time and date listed in the letter of invitation for proposals. When sending
electronic files, the applicant should allow for potential delays in file transfer from the originator’s computer server to the Government website/computer server. Applicants are encouraged to submit their proposals early to avoid potential file transfer delays due to high demand encountered as the submission deadline approaches.

Acceptable evidence to establish the time of receipt at the Government office includes documentary and electronic evidence of receipt maintained by DTRA. Applicants should also print, and maintain for their records, the electronic receipt following submission of a white paper and proposal to the DTRA submission site.

If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be submitted to the DTRA submission site by the exact time specified in the letter of invitation for the invited proposal, the time specified for receipt of submissions will be deemed to be extended to the same time of day specified in the Call on the first work day on which normal Government processes resume.

7. Application Review information

7.1. Evaluation Criteria. The evaluation criteria to be used for review of applications are listed below. Only the first two criteria will be used to evaluate white papers; all four will be used to evaluate invited proposals.

1. Scientific and Technical Merit. The objective of this criterion is to assess the extent to which the applicant presents ideas that are innovative and/or unique with the potential for high payoff in the science area and details a comprehensive technical approach based on sound scientific principles. Innovation will be judged contextually against the white paper’s/proposal’s scope, goals, and setting. To the extent possible, the technical risks, including those of biosafety and security, to accomplish the research or project should be identified with appropriate mitigation/management details.

For Thrust Area 6 white papers/proposals, innovation will also be considered with respect to partner country capabilities.

2. Value to Mission Goals. The objective of this criterion is to assess the extent to which the applicant demonstrates an understanding of the C-WMD research or mission challenges and the contribution to the C-WMD research or mission needs of that thrust area/topic. White papers/proposals must detail research or a project that is responsive to the thrust area/topic as presented in this solicitation. This criterion also addresses the benefit of the proposed effort on enabling knowledge, technology, or capabilities over current methods and/or practices and on the transition potential that is appropriate to the proposed effort. Applicants must also demonstrate an impact of the proposed effort on the institution's ability to perform research relevant to reducing the global WMD threat; and/or to train, through the proposed effort, students and/or partner scientists in science, technology, engineering and/or mathematics.

Thrust Area 6 white papers/proposals must demonstrate an understanding of the CBEP priorities and mission. As such, the degree to which the proposed collaborations may lead to long-term partner country self-sufficiency and sustainment of the jointly developed capabilities will be considered.

3. Capability of the Personnel and Facilities to Perform the Proposed Effort. The objective of this criterion is to assess the extent to which the applicant’s team has the requisite expertise, skills and
resources necessary to perform the proposed program. This includes an assessment of the team’s management construct, key personnel, facilities and past technical experience in conducting similar efforts of the proposed scope. Applicants must demonstrate that their team has the necessary background and experience to perform this project. Facilities should be detailed with discussion of any unique capabilities pertinent to the research. Subcontractors may include Government facilities or Agencies; however the unique expertise or specialized facilities provided through their inclusion must be clearly presented and the validity of the proposer-Governmental relationship must be clearly documented.

4. Cost Realism Evaluation. The objective of this criterion is to establish that the proposed costs are reasonable, realistic, and justified for the technical approach offered and to assess the applicant’s practical understanding of the scope of the proposed effort.

7.2. Review and Selection Process. The white paper and proposal selection process will be conducted based upon a technical review and includes the use of non-government peer reviewers.

Each white paper and invited proposal submitted to a general TA will be reviewed on a rolling basis; topic-based submissions will be reviewed as a batch following receipt deadlines. All applications will be reviewed based on the merit and relevance of the specific white paper/proposal as it relates to the DTRA program, rather than against other white papers/proposals for research in the same general area.

White paper (Phase I) evaluation will be based on the two (2) equally weighted criteria of (1) Technical/Scientific Merit and (2) Value to Mission Goals. The criteria will be scored as Outstanding (O), Good (G), Acceptable (A), Marginal (M) or Unacceptable (U). Any criterion scored as “Unacceptable (U)” will render the white paper “Not Selectable,” and the white paper will not be considered further.

The full proposal evaluation will be based on the four criteria listed above. The first three criteria will be scored Outstanding (O), Good (G), Acceptable (A), Marginal (M) or Unacceptable (U). The fourth criterion will be scored as either Acceptable (A) or Unacceptable (U). Any criterion scored as “Unacceptable (U)” will render the proposal “Not Selectable”.

The Government reserves the right to select all, some, or none of the proposals, or any part of any proposal, received in response to this Call and to make awards without discussions with applicants; however, the Government reserves the right to conduct discussions or request clarifications or updates if determined necessary. Other factors that may be considered during the selection process are the possible duplication with other research currently funded by the Government, program balance across research topics, and budget limitations. Accordingly, proposals may be selected for funding which are not reviewed as highly as others, which are of higher risk and/or which may be of a higher cost.

Additional details, including the due date, for Phase II submissions may be provided to applicants in the invitation e-mail.

7.3. Technical and Administrative Support by Non-Government Personnel. It is the intent of DTRA to use non-government personnel to assist with the review and administration of submittals for this Call. All invited proposals will be reviewed by subject matter experts (peer reviewers) who are non-government personnel.

Participation in this Call requires DTRA support contractors to have access to white paper and invited proposal information including information that may be considered proprietary or otherwise marked with restrictive legends. Existing DTRA contractors include but may not be limited to the following:

Cherokee Nation Strategic Programs, LLC. (Contract Specialist Support); Engility Corporation (a
company under Science Applications International Corporation) (Advisory & Assistance Services) and their subcontractors, Infinity Technology LLC, Quanterion Solutions Inc., Kforce Government Solutions Inc., Kent, Campa, and Kate Inc., CACI, SBG Technology Solutions and their subcontractors, and Terremark Worldwide Inc. Each contract contains OCI provisions and/or includes contractual requirements for non-disclosure of proprietary contractor information or data/software marked with restrictive legends. The applicant, by submitting a white paper or proposal, is deemed to have consented to the disclosure of its information to the aforementioned contractors under the conditions and limitations described herein.

All individuals having access to any proprietary data must certify that they will not disclose any information pertaining to this Call including any submittal, the identity of any submitters, or any other information relevant to this Call.

All applicants to this Call consent to the disclosure of their information under these conditions.

8. Award and Notification Information

Applicants of white papers that are not selected for invitation will be notified of the decision by e-mail at all of the addresses provided at the time of submission. An invitation to submit a proposal will be extended to those applicants whose submissions were selected in Phase I. The invitation will be transmitted via e-mail to all of the e-mail addresses provided at the time of submission.

Applicants will be notified by DTRA of their selection/non-selection for award from the Phase II invited proposals via e-mail to all of the e-mail addresses provided at the time of submission. Notification of proposal selection is not an authorization to begin work.

All notifications will be made from notification@dtrasubmission.net. Emails sent to this email address will not receive a response. A debrief summary will be provided as part of all notification e-mails. If for any reason there is a delivery failure of these e-mail notices, DTRA will not further attempt to contact the applicants.

The applicants must be aware that it is their responsibility to ensure: 1.) the correct e-mails are provided at the time of submission; 2.) this e-mail notification reaches the intended recipient; and 3.) the e-mail is not blocked by the use of ‘spam blocker’ software or other means that the recipient’s Internet Service Provider may have implemented as a means to block the receipt of certain e-mail messages.

9. Agency Contacts

All administrative and programmatic correspondence should be directed to HDTRA1-FRCWMD-C@mail.mil. Every effort will be made to provide a timely response to all inquiries; however, e-mails may not receive a response. Attachments will not be reviewed.

All non-topic-based and some topic-based proposed efforts must be coordinated with the relevant technical point of contact (POC) for each Thrust Area prior to submission of a white paper; e-mail addresses for the DTRA technical POCs for Thrust Areas 1-7 are provided below.

Pre-coordination of research ideas and efforts must be accomplished via e-mail and includes submission of an abstract (recommend less than 250 words) of the proposed project/effort or a paragraph description of the proposed project/effort to the technical POC and a reply e-mail from the technical POC with their disposition to the applicant. DTRA will not review non-topic-based white papers without prior coordination. Please note that attachments to e-mails may not be reviewed.
Specific technical correspondence regarding the thrust areas as well as the topics corresponding to the thrust areas may be directed to the appropriate e-mail address. Please note that technical correspondence e-mails may or may not be reviewed and responded to; attachments may not be reviewed.

Dialogue that assists the applicants in developing better white papers and invited proposals is encouraged. Questions regarding debriefing summaries for white papers that are invited to full proposals are encouraged.

**Thrust Area 1: Science of WMD Sensing and Recognition (Closed)**
E-mail: HDTRA1-FRCWMD-TA1@mail.mil

**Thrust Area 2: Network Sciences (Closed)**
E-mail: HDTRA1-FRCWMD-TA2@mail.mil

**Thrust Area 3: Science for Protection (Closed)**
E-mail: HDTRA1-FRCWMD-TA3@mail.mil

**Thrust Area 4: Science to Defeat WMD (Closed)**
E-mail: HDTRA1-FRCWMD-TA4@mail.mil

**Thrust Area 5: Science to Secure WMD (Closed)**
E-mail: HDTRA1-FRCWMD-TA5@mail.mil

**Thrust Area 6: Cooperative Counter WMD Research with Global Partners**
E-mail: HDTRA1-FRCWMD-TA6@mail.mil

**Thrust Area 7: Fundamental Science for Chemical and Biological Defense**
E-mail: HDTRA1-FRCWMD-TA7@mail.mil

10. **Topics**

Thrust Areas 1, 2, 3, 4, 5, 6, and 7 have no specific topics at this time.

The Thrust Area 7 Basic Research Topics I1-I9—detailed in Amendment 4 are eligible for full proposal submissions in accordance with the letters of invitation sent to applicants.