**Cross-Border Threat Screening and Supply Chain Defense (CBTS)**

**DHS Center of Excellence**

**Proposal Guide**

**Summer 2022**

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# CBTS Vision, Mission and Goals

## Vision

The CBTS vision is to be the premier research center for the development of solutions, protocols and capabilities to support DHS operations to detect, assess, and respond to known and unknown threats and hazards that could adversely impact the nation’s supply chain infrastructure as it relates to people, agriculture, and economy.

## Mission

The CBTS mission is to enhance cross border screening and supply chain defense against known and unknown threats through cutting edge research, education, and innovative applications of emerging technologies.

## Goals

The CBTS goals are to work in collaboration with DHS to deliver solutions, develop processes and enhance capabilities to support DHS operations designed to counter threats and secure our Nation without compromising commercial enterprise.

# CBTS and DHS Partnership

1. Works closely with DHS and others on an on-going basis to formulate research projects so that those efforts are aligned with the most critical knowledge and technology gap
2. Works with research teams to build appropriate stage-gate plans to manage research including test and evaluation plans; identify key value-added propositions to support
3. Places faculty and students (U.S. citizens eligible for clearances) in operational agencies early and often, to develop solutions appropriate to complex homeland security problems
4. Builds a nation-wide or world-wide network of academic and other subject matter experts to be able to access the best experts for each problem in short order
5. Replaces researchers whose projects are not progressing as planned, and establish a competitive process to replace projects that have ended
6. Develops detailed plans for transitioning research results into use, including plans to pursue intellectual property protections and to support the transfer of research to those capable of further developing the technology or service.

# Stages of Research and Development

CBTS funds a range of research and development projects based on the

1. Exploration and Customer Discovery: the stage of research that generates hypotheses or theories through new and refined data analysis, produces observational findings, and creates other sources of research-based information. Efforts to explore customer gaps occurs early in the process. Projects in this stage should describe existing relevant standards, competing approaches, and provide an initial analysis of market conditions.
2. Planning and Concept Refinement: the stage of research that narrows project requirements. This includes conducting preliminary market and technical assessments, identifying customer needs, and developing initial product specifications. Results from this stage of research may be used to inform the design of a study to test the efficacy of an idea/project. Efforts to define the market and identify and assess market drivers that will affect the transfer or adoption of the project outputs should be initiated.
3. Proof of Concept: the stage of development where key technical challenges is initially addressed. Activities may include verifying product requirements and implementing and testing (typically in controlled contexts) approaches to those capability requirements. A technology transfer plan is typically developed that outlines efforts to understand commercialization needs.
4. Testing and Validation: the stage of development where a fully integrated and working prototype is tested. Activities may include iteratively refining the prototype, testing in operational environments, and verifying that all technical requirements are met. A technology transfer plan is typically ongoing in collaboration with the transfer partner(s). Stage results depict that a product embodiment is realizable.
5. Final Design and Launch: the stage of development where the product or service is finalized and made available for customer utilization. This likely requires the development of the corresponding business services that customers will use to buy, license, or otherwise acquire the product or service.

# CBTS Research Priorities

As a DHS Center of Excellence, CBTS funds research in the following areas:

1. Detecting Biological Threats and Disruptions to People and Global Supply Chains
2. Data Integration and Analytics
3. Novel Operational Methods to Use Emerging Tools to Reduce Risk
4. Workforce Development
5. Time Critical Response Support

# Proposal Format, Submission, and Eligibility Requirements

All CBTS requests for proposals (RFP) contain specific content, formatting, and page limit requirements that all researchers must follow. Deadlines for proposal submissions are announced in each RFP. Proposals that do not address the research priorities listed in the RFP, that do not follow formatting, or page limit requirements will be rejected. Proposals arriving after submission deadlines will not receive funding consideration.

## General Proposal Sections

(Specific section page limits will be stated in the RFP)

1. Proposal Cover Sheet
2. Proposal
	1. Identify the project’s goals with respect to specific priority areas listed in the RFP
	2. Outline literature related to the project and its goals
	3. Identify methods and data that will be applied to achieve the goals
	4. Identify expected outcomes and milestones for the project
	5. Describe procedures for assessing the success of the project using the SMART framework - specific, measurable, achievable, realistic, and timely
3. Budget with justification narrative by category
	1. Salaries and benefits
	2. Subcontracts
	3. Equipment
	4. Conferences
	5. Travel
	6. Indirect costs
4. Appendices (examples)
	1. PI CVs
	2. Authors’ contact information
	3. List of potential peer reviewers and the contact information

## Formatting Requirements

All proposals must

1. Be double-spaced
2. Be in an 11-point font
3. Use 1-inch margins
4. Include page numbers

## Eligibility Information

Applications will be accepted from accredited U.S. higher education institutions, for-profit organizations, or organizations that meets the definition of non-profit in OMB Circular A-122, relocated to 2 CFR Part 230.

## Exceptions

* Non-profit organizations described in Section 501(c)(4) of the Internal Revenue Code that engage in lobbying activities as defined in Section 3 of the Lobbying Disclosure Act of 1995 are not eligible to apply.
* Federally Funded Research and Development Centers (FFRDCs) or laboratories funded by federal agencies are not eligible to apply. FFRDC employees may cooperate or collaborate with eligible applicants within the limits imposed by applicable legislation, regulations, and policies, are not eligible to serve in a principal leadership role and may not receive salaries or in other ways augment their agency's appropriations through awards made by this program.
* Institution partnerships with foreign institutions are permitted but may require special justification and approval from CBTS and DHS.
* For-Profit organizations intending to apply may not include profit margins in their costs.
* CBTS is unable to fund federal government agencies.

# Available Funding

CBTS projects selected by DHS are funded through the cooperative agreement with the Center Lead institution. Typically, DHS through CBTS may allocate up to $250,000 per year to each selected research project, subject to availability of funds. The CBTS is responsible for administering funding to all projects within the Center’s portfolio. Specific funding limits are defined in individual Requests for Proposals (RFP).

# Scientific Review of Proposals

The scientific reviews of proposals sent to CBTS will be conducted by review panels who will generally use the following questions to assess the merits of the proposed work. The specific Scientific Merit criteria and weights will be identified in each call for proposals. The following elements and weights are generic, but representative of commonly used criteria.

1. Scientific Merit and Originality/Innovation (45%) – Does the project use appropriate theoretical concepts, technologies, or methodologies, or improve upon existing methods? Does the research have the potential to generate influential publications or lead to new discoveries? Are graduate education and workforce development aspects included in this proposal?
2. Proposed Approach/Methods and Risks (25%) – Are the goals clear and supported by evidence or sound theory? Are the methods clear and appropriate to test the hypothesis? Has the team defined metrics or targets appropriate for the stated goals? Are data generation/collection approaches appropriate? Are risks identified with proposed mitigation strategies?
3. Qualification of Personnel and Suitability of Facilities (20%) – Does the team have the breadth of qualifications to conduct and complete the proposed work? Does the team have prior expertise in similar areas? Are the facilities suitable for the proposed research?
4. Budget and Schedule (10%) – Are the costs appropriate and reasonable? Is the budget proportional to the work being performed and the resources used? Does the team demonstrate an ability to deliver products within the proposed budget and on schedule?

## Scientific Reviewer Selection

Researchers may submit a list of potential reviewers for CBTS’s consideration in the scientific review of their proposal. The list must include specific names with titles, and complete contact information including the potential reviewers’ e-mail addresses. This list is not required, but if submitted should be submitted with the proposal by the submission date.

In addition:

1. Researchers should ensure there are no conflicts of interest between the recommended reviewers and the PI’s and Co-PI’s listed on the proposal. Reviewers will also be asked to ensure there are no conflicts of interest with the PI’S and Co-PI’s
2. Reviewers will know the names of the researchers, but the names of the reviewers will not be shared with proposal authors
3. CBTS reserves the right to send the proposal to the most qualified reviewers and may or may not use names from the list provided by the researchers
4. In some cases, reviewers will be asked to sign non-disclosure agreements prior to receiving the proposals for review.

**Consolidated DHS- CBTS Proposal Review Decision Process**

Once scientific reviews are complete, CBTS meets with the DHS University Programs Program Managers and other DHS stakeholders to assess review comments and to determine which, if any, proposals move forward to the workplan stage. All proposal authors are contacted after this stage about the need to develop a workplan.

# Additional Project Requirements

Once a proposal is accepted, funding may be subject to additional requirements that will be addressed during the creation of a project workplan.

# Terms and Conditions Flowdown Requirements

The CBTS COE is subject to the Terms and Conditions under the prime award from DHS. These Terms and Conditions, and all policies and requirements within, will flow down to all sub-awards or sub-contracts for investigators who conduct research under the sponsorship of the CBTS cooperative agreement. Additional Terms and Conditions will also flow down from Texas A&M. Copies of these Terms and Conditions are available upon request. Some of the key conditions are summarized below.

## Foreign Participation Reporting Instructions

The participation of foreign scientists, and students on DHS sponsored/funded academic and other programs may result in continuous DHS Center of Excellence Cooperative exposure of DHS information, personnel, IT systems, technologies, facilities, resources, and programs by non-U.S. citizens. To mitigate this potential security risk, DHS Management Policy 121-08 stipulates all foreign scientist, professors, principal investigators, and student nominees involved in long-term (greater than 30 days) DHS sponsored/funded academic or other DHS programs must submit a DHS Form 11055 to the DHS Office of Chief Security Officer. The Director/Principal Investigator is required to ensure all foreign investigators and students working on DHS sponsored/funded research or receiving tuition or travel support of any kind through this award, complete DHS Form 11055, to report all foreign national students/teaching assistants. Within the Form, Section I (Foreign National Information), Section II (Foreign National Information -Passport/Visa), and Section III (Foreign National Information (Employer Information) must be completed. Sponsor information will be completed internally at S&T. Form 11055 shall be submitted within 30 days of the end of the budget period for the upcoming annual workplan. For individual engagements with Foreign Nationals, Recipient will submit Form 11055 at least 30 days prior to the activity in which the foreign national participates.

# Requirements for Research Involving Human Subjects

Researchers and their institutions shall conduct all research involving human subjects in compliance with the requirements set forth in 6 C.F.R. § 46, Subparts A, and 45 C.F.R. § 46, Subparts B-D, DHS Directive 026-04, *Protection of Human Subjects*, and any

related DHS policies and instructions prior to initiating any work with human subjects under

an award. Researchers and any institutions planning to perform research involving human subjects under an award must submit the documentation for CAPO review.

Each facility conducting work involving human subjects under an award is required to have a project-specific Certification of Compliance letter issued by the CAPO. Researchers must submit the documentation to the CAPO for compliance review and certification **prior to initiating research involving human subjects under an award.**

# Requirements for Research Involving Animals

Researchers and their institutions shall conduct all research involving animals under

an award in compliance with the requirements set forth in the Animal Welfare Act of 1966

(P.L. 89-544), as amended, and the associated regulations in 9 C.F.R., Chapter 1, Subchapter

A; the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals

(which adopts the “U.S. Government Principles for the Utilization and Care of Vertebrate

Animals used in Testing, Research, and Training”, 50 FR 20864, May 20, 1985); the National

Research Council (NRC) Guide for the Care and Use of Laboratory Animals, the Federation of

Animal Science Societies (FASS) Guide for the Care and Use of Agricultural Animals in

Agricultural Research and Teaching; and any additional requirements set forth in the DHS

Directive for the Care and Use of Animals in Research (026-01). Researchers planning to perform research involving animals under an award must comply with the requirements and submit the documentation outlined in this section.

Requirements for Initial Review of Research Involving Animals. Research Involving Animals includes any research, experimentation, biological testing, and other related activities involving live, vertebrate animals, including any training for such activities. Each facility conducting research involving animals under an award must submit copies of the following documentation to the CAPO for review **prior to the initiation of such research.**

# Biological Laboratory Work Compliance Requirements

Researchers and their institutions shall conduct all biological laboratory work in compliance with applicable federal regulations; the latest edition of the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories; DHS Directive 066-02, Biosafety; and any local institutional policies that may apply for Researcher institution facilities performing work under an award. The CAPO will review the submitted Treaty Compliance Form (TCF) for planned work under an award to determine the applicability of the requirements outlined in this section. Researchers must contact the CAPO at STregulatorycompliance@hq.dhs.gov for guidance on the requirements, and then submit all required documentation based on CAPO guidance, prior to the initiation of any biological laboratory work under an award.

# Dual Use Research of Concern Requirements

Researchers and their institutions shall conduct all research involving agents and toxins identified in sections III.1 and 6.2.1 of the *USG Policy for Oversight of Dual Use* Research of Concern and USG Policy for the Institutional Oversight of Dual Use Research of *Concern*, respectively, in accordance with both policies referenced above and in accordance with any additional requirements set forth in related DHS policies and instructions. Researchers planning to perform research involving agents and toxins identified in sections III.1 and 6.2.1 of the USG DURC policies under an award must submit the following documentation outlined in this section for CAPO review.

Researchers shall ensure that all sub-awards/contracts at any tier adhere to USG DURC policies where the sub-Researcher is performing work with agents or toxins identified in sections III.1 of the *USG Policy for Oversight of Dual Use Research of Concern* and 6.2.1 of the *USG Policy for the Institutional Oversight of Dual Use Research of Concern*.

# Compliance with Export Controls

Researchers and their institutions shall conduct all such activities, to include all DHS-funded research and development, acquisitions, and collaborations in full compliance with U.S. export controls—to include the Export Administration Regulations (EAR), the International Traffic in Arms Regulations (ITAR), and the Office of Foreign Assets Control (OFAC) Regulations. Researchers will ensure that all legal requirements for compliance with U.S. export controls are met prior to transferring commodities, technologies, technical data, or other controlled information to a non-U.S. person or entity. Upon DHS request, researchers and their institutions must provide to CAPO documentation and any other information necessary to determine satisfaction of this requirement.

All documentation, as well as any questions or concerns regarding export controls, should be

submitted to the CAPO at exportcontrols@hq.dhs.gov.

# Controlled Unclassified Information

The parties understand that information and materials provided pursuant to or resulting from an award may be export controlled, sensitive, for official use only, or otherwise protected by law, executive order, or regulation. Researchers are responsible for compliance with all applicable laws and regulations. Nothing in any award shall be construed to permit any disclosure in violation of those restrictions.

# Intellectual Property, Patent, and Data Rights

## Patent Rights

Researchers are subject to applicable regulations governing patents and inventions, including

government-wide regulations issued by the Department of Commerce at 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements.” The clause at 37 CFR 401.14 is

incorporated by reference herein. All reports of subject inventions made under an award should be submitted to DHS using the Interagency Edison system website at <http://www.iedison.gov>.

## Data Rights

1. General Requirements. Researchers grant the Government a royalty free, nonexclusive, and irrevocable license to reproduce, display, distribute copies, perform, disseminate, or prepare derivative works, and to authorize others to do so, for Government purposes in:
	1. Any data that is first produced under an award and provided to the Government.
	2. Any data owned by third parties that is incorporated in the data provided to the Government under an award; or
	3. Any data requested in paragraph 2 below, if incorporated in the Award. “Data” means recorded information, regardless of form or the media on which it may be recorded.
2. Additional requirements
	1. Requirement: If the Government believes that it needs additional research data that was produced under an award, the Government may request the research data and researchers agree to provide the research data within a reasonable time.
	2. Applicability: The requirement in paragraph 2.a of this section applies to any research data that are:
		1. Produced under an award, either as a Researcher or sub-researcher.
		2. Used by the Government in developing an agency action that has the force and effect of law; and
		3. Published, which occurs either when:
			1. The research data is published in a peer-reviewed scientific or technical journal; or
			2. DHS publicly and officially cites the research data in support of an agency action that has the force and effect of law.
	3. Definition of “research data:” For the purposes of this section, “research data:
		1. Means the recorded factual material (excluding physical objects, such as laboratory samples) commonly accepted in the scientific community as necessary to validate research findings.
		2. Excludes:
			1. Preliminary analyses.
			2. Drafts of scientific papers.
			3. Plans for future research.
			4. Peer reviews.
			5. Communications with colleagues.
			6. Trade secrets.
			7. Commercial information.
			8. Materials necessary that a researcher must hold confidential until they are published, or similar information which is protected under law; and
			9. Personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, such as information that could be used to identify a person in a research study.
	4. Requirements for sub-awards: Researchers agree to include in any subaward made under this Agreement the requirements of an award term (Patent Rights and Data Rights) and DHS Standard Terms and Conditions award term (Copyright).

# Data Requirements

## Access to Data

Researchers and analysts must be able to obtain access to needed analytical products, relevant data, and open source and publicly available information. They also should anticipate interacting with homeland security partners and stakeholders and other subject matter experts. Applicants must discuss any needs for unique or sensitive data, testing, or laboratory facilities that will be required to conduct the research, and how the applicant will ensure its researchers can access necessary data and facilities.

## Data Acquisition and Management Plan

Prior to initiating work on any research project that requires access to third party data, including data provided by DHS Component agencies, Researchers must provide a plan for acquiring data as described in (b) below. Researchers shall coordinate review of the plan with the University Privacy Officer prior to submission to DHS. Researchers shall submit plans to the CBTS for review and comment prior to initiating research. DHS will review the plan and notify Researchers of any concerns that may be identified. Data Acquisition and Management Plans must be reviewed, at least, annually and identify or update, as necessary, any new areas of research that require access to third party data.

The plan must include the following information:

1. The purpose for collecting the data and characteristics of the data. If the data is deemed privacy sensitive, Researchers must comply with the applicable federal, state, and local privacy laws, as well as DHS and university/research institute policies regarding the collection and use of personally identifiable information (PII).
2. The uses of the data.
3. A written commitment from the data’s owner(s) to provide researchers the required data and the conditions under which the data will be provided.
4. A plan for the disposal or retention of the data after the research ends.

## Information Protection Plan

Researchers and their institutions shall agree that all research conducted under an award is intended to have publicly releasable results. Accordingly, no research under an award should involve, use, or generate sensitive information, which includes PII, and/or classified information.

To ensure research under the research does not involve, use, or generate sensitive or classified information, intentionally or accidentally, researchers shall develop an Information Protection Plan that incorporates policies and procedures that properly define, recognize, and protect such sensitive or classified information. Researchers will submit its plan to the CBTS and forwarded to DHS Program Officer for review and comment within 30 days of award. Researchers will be notified of any concerns that may be identified once the plan is reviewed by DHS. Researchers will review the Information Protection Plan at least annually and update as necessary for new or existing areas of research that may involve sensitive information. Researcher will submit any updates to the Information Protection Plans along with annual reports to the DHS Program Officer for review and comment.

Researchers are responsible for compliance with all applicable laws, regulations, and policies. Nothing in an award shall be construed to permit any public disclosure of sensitive and/or classified information in violation of these restrictions.

The Information Protection Plan will ensure researcher identifies, secures, and prohibits public disclosure of “sensitive or classified information.” Researchers maintain responsibility for their due diligence in identifying and properly marking any information governed by U.S. export controls regulations.

Required Notifications to DHS:

If researchers or CBTS determines that research under an award involved, used, or generated sensitive or classified information, it agrees to secure the information in accordance with its Information Protection Plan and notify the DHS Program Officer immediately.

Researchers shall inform the DHS Program Officer in writing within 24 hours of becoming aware of any potential security

# Publications:

## Acknowledgement and Disclaimer

1. Publications. All publications produced because of this funding which are submitted for publication in any magazine, journal, or trade paper shall carry the following:
	1. Acknowledgement. “This material is based upon work supported by the U.S. Department of Homeland Security under Grant Award Number 18STCBT00001-03-00.
	2. Disclaimer. “The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Department of Homeland Security.”
2. Researcher agrees to include in any sub-award made under this Agreement the requirements of an award term (Publications).

Co-Authoring of Reports and Articles.

Papers, presentations, or other documents co-authored by a DHS employee and a COE researcher will be subject to DHS’s publications approval process prior to dissemination of the publication by the authors. Recipient shall submit these publications to the DHS author for DHS clearance at least sixty (60) days prior to dissemination of the publication. Recipient agrees to submit all required DHS clearances with the publication materials to the DHS Program Officer of Record.

## Use of DHS Seal and DHS S&T Logo

Researchers shall not use the DHS seal. Researchers must acquire DHS’s approval prior to using the DHS S&T logo.

Enhancing Public Access to Publications. DHS requires that researchers shall forward one electronic (PDF) copy of all publications generated under an award to the Program Officer at the time of publication. The Program Officer will make all publications publicly available by posting on [www.hsuniversityprograms.org](http://www.hsuniversityprograms.org) in a manner consistent with copyright law no later than 12 months after the official date of publication. DHS Policy explicitly recognizes and upholds the principles of copyright. Authors and journals can continue to assert copyright in publications that include research findings from DHS-funded activities, in accordance with current practice. While individual copyright arrangements can take many forms, DHS encourages investigators to sign agreements that specifically allow the manuscript or software to be deposited with DHS for U.S. Government use after journal publication. Institutions and investigators may wish to develop particular contract terms in consultation with their own legal counsel, as appropriate. But, as an example, the kind of language that an author or institution might add to a copyright agreement includes the following: “Journal (or Software researcher) acknowledges that the Author retains the right to provide a final copy of the final manuscript or software application to DHS upon acceptance for Journal publication or thereafter, for public access purposes through DHS’s websites or for public archiving purposes.”

# Travel

Travel required in the performance an award must comply with 2 C.F.R. Part 200. Foreign travel must be approved by DHS in advance and in writing. Requests for foreign travel identifying the traveler, the purpose, the destination, and the estimated travel costs must be submitted to the DHS Grants Officer 60 days prior to the commencement of travel.