The Department of Homeland Security (DHS)
Notice of Funding Opportunity (NOFO)
DHS Science and Technology Directorate (S&T)

Center of Excellence for Homeland Security in the Arctic

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All entities wishing to do business with the federal government must have a unique entity identifier (UEI). The UEI number is issued by the SAM system. Requesting a UEI (Sam.gov information can be found at: https://sam.gov/content/entity-registration.

Grants.gov registration information can be found at:
https://www.grants.gov/web/grants/register.html.

1. **Planned UEI Updates in Grant Application Forms**

   On April 4, 2022, the Data Universal Numbering System (DUNS) Number was replaced by a new, non-proprietary identifier requested in, and assigned by, the System for Award Management (SAM.gov). This new identifier is the Unique Entity Identifier (UEI).

   Additional Information can be found on Grants.gov:

   https://www.grants.gov/web/grants/forms/planned-uei-updates.html

A. Program Description

1. **Issued By**
   U.S. Department of Homeland Security (DHS) Science and Technology Directorate (S&T)

2. **Assistance Listings Number**
   97.061

3. **Assistance Listings Title**
   Centers for Homeland Security

4. **Funding Opportunity Title**
   Center of Excellence for Homeland Security in the Arctic

5. **Funding Opportunity Number**
   DHS-23-ST-061-ARCTIC

6. **Authorizing Authority for Program**
   Homeland Security Act of 2002, Section 308, as amended, P.L. 107-296. Codified at 6 U.S.C. 188

7. **Appropriation Authority for Program**
   Consolidated Appropriations Act 2022, Pub. Law No. 117-103, Division F, Title IV, Research Development, Training and Services, Science and Technology Directorate Research and Development (FY ’22)

8. **Announcement Type**
   Initial

9. **Program Overview, Objectives, and Priorities**

a. Program Overview and Objectives

The DHS S&T Office of University Programs (OUP) is requesting applications from accredited U.S. colleges and universities to lead a consortium of universities for a Center of Excellence for Homeland Security in the Arctic. The DHS COEs are university consortia that work closely with DHS Components and their partners to conduct research, develop, and transition mission-relevant science and technology, educate the next generation of homeland security technical experts, and train the current workforce in the latest scientific applications. Each COE is led by an accredited U.S. college or university and involves multiple partners that change over time. COE partners include other academic institutions; commercial industry; DHS Components; Department of Energy National Laboratories; Federally Funded Research and Development Centers (FFRDCs); other federal agencies that have homeland security-relevant missions; state, local, tribal, territorial (SLTT) governments; non-profits; and first responder organizations. DHS envisions the COEs as long-term trusted academic partners that provide an array of resources to help DHS achieve its missions and improve operations across the Homeland Security Enterprise (HSE). The COEs that make up the COE network are listed at http://www.dhs.gov/st-centers-excellence. The new Center will be a fully integrated component of the COE network and will take advantage of the network's resources to develop mission-critical research, education, and technology transition programs.

b. Priorities and Expectations for a COE

Establishing a COE is a major and expensive effort that involves numerous individuals and organizations. The COEs collaborate and build relationships over 10 years with DHS, and priorities will evolve during that period. It is critical for university applicants to understand the roles and requirements of being a COE lead institution before applying and to craft a proposal that meets all of the requirements of a DHS COE.

There are three major aspects of operating a COE that the application will have to address. The detailed expectations and requirements for each of these aspects is outlined in the following sections of this funding opportunity:

- Section B.b.2 Research Program
- Section B.b.3 Education and Workforce Development Program
- Section B.4 Management and Administration

Applicants should read this entire funding opportunity prior to applying, paying close attention to these sections and other pertinent sections, such as D.10. Content and Form of Application Submission, D.12. Other Submission Requirements, E.1. Application Evaluation Criteria, E.2. Review and Selection Process, and Appendix A: Cooperative Agreement Terms and Conditions.

The DHS COEs are different from many other federally funded university centers. Each COE lead institution must build a nation-wide or world-wide network of academic and other SMEs in order to be able to access the best experts for each problem in short order. This includes developing strong partnerships with Minority Serving Institutions (MSIs) and committing resources to support building a diverse, highly capable, technical

workforce for DHS and the broader HSE. The HSE (Homeland Security Enterprise) is defined as the collective effort and shared responsibility to maintain critical homeland security capabilities, and includes federal, state, local, tribal, and territorial governments; non-governmental, private-sector, and international partners; and individuals, families, and communities.[1] HSE partners in the Arctic include domestic and international public- and private-sector organizations.

The COE team must also demonstrate their commitment to develop a long-term, trust-based partnership between universities, DHS components, and organizations across the broader HSE to provide targeted capabilities and education resources. DHS COEs operate using a unique research management approach where researchers work alongside operational and decision-making personnel to find opportunities to use science and technology to enhance homeland security capabilities. For example, university faculty may spend time working with customers in the field to better understand their needs and how their results may be applied to operations, policy, and processes. As such, DHS looks to COE leadership to maintain situational awareness of cutting-edge research to inform DHS and the HSE of research futures, and to identify potential threats arising from, or to be mitigated by, novel technology.

DHS expects the work of the COEs to make a difference and to produce implementable results. Proposals for re-branded off-the-shelf research or pet projects will not survive DHS's rigorous review processes. DHS needs use-inspired, results-focused research that generates customized and innovative solutions.

The DHS mission requires that its operational Components [e.g., United States Coast Guard (USCG), Federal Emergency Management Agency (FEMA), Cybersecurity and Infrastructure Security Agency (CISA), United States Customs and Border Protection (U.S. CBP) etc.] be responsive to a wide range of constantly evolving homeland security challenges and threats, both natural and manmade. As a result, DHS priorities and operational challenges may change over the course of a COE's performance period. Therefore, COE research programs should be flexible enough to adapt to new homeland security challenges and priorities, while at the same time maintaining focus on their core research areas.

It is also important to understand that the skill sets required to make a COE successful are more extensive than research expertise alone. COEs need to have the ability and commitment to communicate frequently with a variety of actors, from federal staff, to attorneys, to university administrators, to the private sector. In addition to a multidisciplinary research team, COEs should include experts in finance, project management, education, training, outreach and marketing, intellectual property management, technology development, and technology transfer. Applicants should demonstrate an understanding of how to translate research to practice, including aspects

[1] DHS Lexicon: https://www.dhs.gov/publication/dhs-lexicon

such as technology and business market assessment, protection of intellectual property rights, licensing, and federal financial assistance and federal acquisition.

DHS funds the COEs through cooperative agreements, which support research for public purposes and enable substantial federal agency involvement in COE activities and research. OUP facilitates interactions between researchers, DHS SMEs, and customers from the public and private sectors (e.g., homeland security practitioners). The goal of this hands-on management is to develop a trusting, sustained relationship between universities, DHS Components, and their public- and private-sector stakeholders across the broader HSE.

OUP will work with COE management to formulate each COE's research and education projects, and to develop communication and transition strategies. Interactions commonly include COE-sponsored workshops that bring together diverse SMEs, industry representatives, and federal managers. DHS believes this frequent interaction is the most effective way to get the federal government's research investments into operational use by security, intelligence, and emergency response personnel. **Only academic institutions that can embrace this type of close working relationship should apply for this funding opportunity.** For more information about cooperative agreements and substantial federal agency involvement, please see Section B.

c. Overarching Vision of the COE for Homeland Security in the Arctic

The Center of Excellence (COE) for Homeland Security in the Arctic will conduct research and education to support homeland security mission goals in the Arctic, including those described in the *2022 National Strategy for the Arctic Region,*[2] which seeks an Arctic region that is peaceful, stable, prosperous, and cooperative, the *2021 DHS Strategic Approach for Arctic Homeland Security*,[3] which provides a strategic alignment and vision to protect the homeland and secure prosperity in the region, and the *2019 U.S. Coast Guard Arctic Strategic Outlook*,[4] which reaffirms United States Coast Guard's (USCG) commitment to leadership in the Arctic region. The *DHS Strategic Approach* summarizes the challenges and opportunities for homeland security in the Arctic:

> The U.S. Arctic is dynamic; evolving environmentally, operationally, and strategically. A challenging landscape and seascape, combined with the sheer vastness of distance from the mainland United States, austere communications, and limited infrastructure, exacerbate the harshness of Arctic operations. This new operating environment will not only require additional maritime security presence

[2] 2022 National Strategy for the Arctic Region: https://www.whitehouse.gov/wp-content/uploads/2022/10/National-Strategy-for-the-Arctic-Region.pdf
[3] 2021 DHS Strategic Approach for Arctic Homeland Security: https://www.dhs.gov/publication/strategic-approach-arctic-homeland-security
[4] 2019 USCG Arctic Strategic Outlook: https://www.uscg.mil/arctic/

but will also necessitate new operational capabilities and additional resources to perform cyber and infrastructure security missions, trade and travel facilitation, and natural disaster response in the near term; and inevitably, additional mission sets. [5]

For example, as changing conditions such as receding sea ice increase access to waters and land across the region, the homeland security mission in the Arctic is expanding.[6] This includes furthering collaborative efforts to strengthen security and resilience with federal, state, local, tribal, and territorial entities; private and non-profit industry; and communities and individuals. This will also involve efforts to ensure the resilience of the Arctic infrastructure necessary for basic and surge operations as well as lifeline functions against a range of natural and man-made threats; the advancement of situational awareness in the Arctic; the ability to respond to and recover from adverse events; identification of best practices, actions, technologies and policies that could prevent or help plan and prepare for adverse events; and fostering collaborative efforts via interagency and international fora to address areas of mutual interest.

The COE for Homeland Security in the Arctic will conduct interdisciplinary basic and applied research, education, and technology transition to inform those efforts and support DHS components having an operational presence in the Arctic, including the USCG, FEMA, CBP, CISA and other HSE entities in coordination with partner agencies, such as the National Oceanic and Atmospheric Administration (NOAA), the Environmental Protection Agency (EPA) the Department of Defense (DoD), the Department of State (DoS), and the National Institute of Standards and Technology (NIST).

DHS anticipates the Center's research will produce tangible research and education results for use by DHS, other government agencies, communities, non-profit organizations, industry, and other relevant entities across the HSE. The Center's research results will include tools, technologies, and knowledge products (e.g., best practices, resource guides, case studies) for use in improving homeland security operations, decision-making, and policy at all levels of government. The Center's education and workforce development programs will include innovative initiatives that: embed students with homeland security practitioners to conduct research; foster opportunities for students to gain practical experience in homeland security-related professions; integrate homeland security studies into existing science, technology, engineering, and mathematics (STEM) graduate and undergraduate degree programs; and provide technical education and training programs for homeland security professionals.

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[5] 2021 DHS Strategic Approach for Arctic Homeland Security: https://www.dhs.gov/publication/strategic-approach-arctic-homeland-security

[6] 2021 DHS Strategic Framework for Addressing Climate Change: https://www.dhs.gov/sites/default/files/publications/dhs_strategic_framework_10.20.21_final_508.pdf

d. Geographic Focus of the Center

There are numerous definitions of the Arctic with differing descriptions of the geographic areas (land and sea) encompassed by the term.[7]

Section 112 of the *Arctic Research and Policy Act (ARPA) of 1984* (codified in 15 U.S.C. 4111), as amended, defines the U.S. Arctic as:

> "…all United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain." [8]

This definition "includes certain parts of Alaska below the Arctic Circle, including the Aleutian Islands and portions of central and western mainland Alaska, such as the Seward Peninsula and the Yukon Delta." [9]

This COE will be looking at the Arctic as defined in ARPA in addition to certain other areas pertinent to DHS strategic objectives, including but not limited to the entire State of Alaska. This expanded geographic focus better incorporates DHS's operational role in the region, and better positions the Center to conduct research and education relevant to homeland security mission sets, as outlined in the *2012 Presidential Policy Directive 21 (PPD-21), Critical Infrastructure Security and Resilience,*[10] which aims to advance "national unity of effort to strengthen and maintain secure, functioning, and resilient critical infrastructure," and *2011 PPD-8, National Preparedness*,[11] which aims to strengthen "the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the nation." There are numerous international agreements that describe operational areas for different functions that are relevant to homeland security. These include the *2013 Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA)*,[12] the *2011 Agreement on Cooperation on Aeronautical and Maritime Search*

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[7] 2019 Congressional Research Service (CRS) Report, Changes in the Arctic: Background and Issues for Congress: https://crsreports.congress.gov/product/pdf/R/R41153/144
[8] Arctic Research and Policy Act (ARPA) of 1984: https://www.nsf.gov/geo/opp/arctic/iarpc/arc_res_pol_act.jsp
[9] 2019 Congressional Research Service (CRS) Report, Changes in the Arctic: Background and Issues for Congress: https://crsreports.congress.gov/product/pdf/R/R41153/144
[10] 2012 Presidential Policy Directive 21 (PPD-21), Critical Infrastructure Security and Resilience: https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil
[11] 2011 PPD-8, National Preparedness: https://www.dhs.gov/presidential-policy-directive-8-national-preparedness
[12] 2013 Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA): https://oaarchive.arctic-council.org/handle/11374/529

and Rescue in the Arctic,[13] the *2017 Agreement on Enhancing International Arctic Scientific Cooperation*,[14] among others. Applicants should align the geographic focus of proposed research and education to accomplish the proposal's objectives.

e. DHS Strategic Goals and Objectives

The missions of the Department are broad and complex: counter terrorism and homeland security threats, secure U.S. borders and approaches, safeguard cyberspace and critical infrastructure, preserve and uphold the Nation's prosperity and economic security, strengthen preparedness and resilience, and champion the DHS workforce and strengthen the Department. Accordingly, DHS engages with the academic community to conduct strategic and innovative research and education in support of these missions. Proposals should aim to aid DHS overall and the operational components in support the Department's strategic goals and objectives. Objectives 1.4, 2.1, 2.2, 3.2, 4.2, 4.3, 5.1, 5.2, 6.2, and 6.3 of the 2020-2024 DHS Strategic Plan[15] should be referenced when articulating anticipated impacts, showcasing how research by university-led consortia can support relevant operational needs of the Department. Figure 1 below provides a crosswalk of DHS Goals and Objectives and operational component responsibilities. See below Figure 1: DHS Goals and Objectives Crosswalk from the *DHS Strategic Plan FY 2020-2024.*

[13] 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic: https://oaarchive.arctic-council.org/handle/11374/531

[14] 2017 Agreement on Enhancing International Arctic Scientific Cooperation: https://www.arctic.gov/agreement-on-enhancing-international-arctic-scientific-cooperation/

[15] DHS Strategic Plan FY2020 – 2024: https://www.dhs.gov/publication/department-homeland-securitys-strategic-plan-fiscal-years-2020-2024

Figure 1: DHS Goals and Objectives Crosswalk from the *DHS Strategic Plan FY 2020-2024*

Strategic Goals	Strategic Objectives	CBP	CISA	FEMA	ICE	TSA	USCIS	USCG	USSS	HQ/Support
Goal 1: Counter Terrorism and Homeland Threats	1.1 Collect, Analyze, and Share Actionable Intelligence									
	1.2 Detect and Disrupt Threats									
	1.3 Protect Designated Leadership, Events, and Soft Targets									
	1.4 Counter WMDs and Emerging Threats									
Goal 2: Secure U.S. Borders and Sovereignty	2.1 Secure and Manage Air, Land, and Maritime Borders									
	2.2 Extend the Reach of U.S. Border Security									
	2.3 Enforce U.S. Immigration Laws									
	2.4 Administer Immigration Benefits									
Goal 3: Secure Cyberspace and Critical Infrastructure	3.1 Secure Federal Civilian Networks									
	3.2 Strengthen the Security and Resilience of Critical Infrastructure									
	3.3 Assess and Counter Evolving Cybersecurity Risks									
	3.4 Combat Cybercrime									
Goal 4: Preserve and Uphold the Nation's Prosperity and Economic Security	4.1 Enforce U.S. Trade Laws and Facilitate Lawful Trade and Travel									
	4.2 Safeguard the U.S. Transportation System									
	4.3 Maintain U.S. Waterways and Maritime Resources									
	4.4 Safeguard U.S. Financial Systems									
Goal 5: Strengthen Preparedness and Resilience	5.1 Build a National Culture of Preparedness									
	5.2 Respond During Incidents									
	5.3 Support Outcome-Driven Community Recovery									
	5.4 Train and Exercise First Responders									
Goal 6: Champion the DHS Workforce and Strengthen the Department	6.1 Strengthen Departmental Governance and Management	All DHS Headquarters Offices and Component counterparts								
	6.2 Develop and Maintain a High Performing Workforce									
	6.3 Optimize Support to Mission Operations									

f. Research and Education Program

Applicants must propose a research program to address each of the research and education themes and a selection of topics outlined below. Each theme is organized into major topics that are related to the mission areas of DHS. Within each topic is a list of research questions. **Successful proposals must address all themes; however, DHS does not expect proposals to address every topic within a theme or every question within a topic.** Applicants should select topics and questions within a theme area, explain why they selected these topics or questions, and propose methods, metrics, and outcomes to answer the relevant questions. **Include at least one research project for each research theme in this NOFO for which the Center will have a high level of expertise and capability.**

Because COEs are interdisciplinary by nature and design, DHS expects COEs to engage researchers from a variety of disciplines to tackle complex problems. Applicants should present interdisciplinary, comprehensive, problem-based approaches to research and education in each of the major theme areas that include faculty, students, and Center leadership. DHS welcomes applicants to suggest a range of innovative approaches to generate excellent and relevant research, while exposing students and faculty to real world challenges.

The Research Program should consist of: (a) an overview of the research program, and (b) specific project proposals.

g. Research and Education Themes, Topics, and Questions

Themes	Topics
1. Advance All-Domain Situational Awareness	1A. Impacts of Emerging Technology on Operations
	1B. Technology Suitability and Adaptability for the Operational Environment
	1C. Trend Analysis of Dynamic Human and Non-Human Systems in a Changing Environment
2. Improve Understanding of Risks and Potential Impacts	2A. Foundational Risk Assessment and Analysis for Operations
	2B. Risk Management for Crisis Response
3. Enable Adaptation for Resilience	3A. Operational Adaptation for Security
	3B. Planning and Analysis for Future Conditions
	3C. Advanced Technologies and Tools for Remote and Harsh Operating Conditions
	3D. Building Capacity to Adjust to Future Conditions
4. Expand Collaboration and Cooperation across the Homeland Security Enterprise	4A. Training, Education, and Workforce Development
	4B. Outreach and Engagement
	4C. Collaboration with Local Communities

Table 1 - Center of Excellence for Homeland Security in the Arctic Research and Education Themes and Topics

Theme Area One: Advance All-Domain Situational Awareness

The Arctic presents unique challenges for maintaining situational awareness for operations, such as difficulty in maintaining effective awareness across vast and remote spaces. In addition, there are a number of changing conditions in the Arctic such as permafrost thaw, coastal erosion, and extreme variability in sea ice coverage. [16] Understanding the changing physical, operational, and geostrategic environments is and will be essential in advancing all-domain awareness, to include persistent awareness across land, sea, air, cyberspace, and space, and proactively addressing homeland security across the Arctic.

DHS Components need to understand how the Arctic's physical environment is changing in order to anticipate how those changes will impact DHS operations. There is a lack of data on the Arctic environment and information sharing capability among Arctic operators in comparison to other environments in which DHS and the HSE operate, yet the Arctic is changing more rapidly than these other environments. DHS seeks forward-looking methods and approaches to (1) better understand what conditions are changing in Arctic regions, where they are changing, and how they are changing over time, and (2) enable situational awareness of current and future changing conditions and their impacts across the HSE, with an emphasis on all-domain situational awareness for homeland security operations, including: Maritime Security, Critical Infrastructure Protection and Resilience, Disaster Response and Recovery, Hazard Mitigation, Border Security, and Protection of Trade and Travel.

Below are representative research questions of interest to DHS by topic (questions not listed in priority order):

Topic 1A. Impacts of Emerging Technology on Operations

- What emerging technologies are likely to have the biggest impacts on homeland security missions in the Arctic? Will these technologies increase or decrease vulnerabilities with respect to homeland security missions?
- What resilient technologies and methods are available or can be developed to monitor and manage vessel traffic, with a focus on providing safe vessel routing, collision avoidance, ice navigation, casualty response, and maritime domain awareness?
- Maritime operations require accurate and timely awareness as well as future forecasting of activities within the domain to support responses. Maritime awareness in the Arctic is currently restricted due to limited surveillance, monitoring, modeling, and information system capabilities.
    - How are technological advances and their intersection with changing environmental conditions in the Arctic likely to impact these capabilities?
- As internet infrastructure continues to emerge within the U.S. and Canadian Arctic areas, gaining an understanding of the opportunities and impacts for remote villages related to commercial and economic growth, and community resilience is essential.

[16] 2021 DHS Strategic Approach for Arctic Homeland Security: https://www.dhs.gov/publication/strategic-approach-arctic-homeland-security

- How will technological advances, such as modern high-speed internet and broadband cellular network coverage as it becomes available throughout the U.S. and Canadian Arctic, impact commercial and economic growth, and community resilience?

Topic 1B. Technology Suitability and Adaptability for the Operational Environment

- Are there existing tools, technologies or methods used for homeland security operations in the Continental United States (CONUS) that could be adapted for use within the Arctic operational environment?
- Will maritime object detection models developed in non-Arctic regions work in the Arctic?
- What type of sensors are necessary and are able to function in the Arctic? This includes persistent sensors (potentially with no solar power during much of the year) and asset-mounted sensors (that will still face conditions beyond normal operating parameters of common sensors).
- Ice ridges are a challenge to icebreakers. What measures and technologies are available or can be developed to improve navigation in or near ice-infested waters (e.g., for ice ridging detection and ice thickness measurements)?
- Global Positioning Signal (GPS) jamming can have a critical impact on safe navigation in the Arctic. An increasing number of satellites are populating the Low Earth Orbit (LEO) – most of which are related to communications, Earth observation, and radar. In addition to these targeted applications, there is yet-to-be-harnessed potential for LEO and positioning, navigation, and timing (PNT) systems known as LEO-PNT.
    - Can commercial LEO satellites be used PNT? What does a LEO-PNT system entail? What technology is involved and what are the potential challenges?
- What navigation and marine safety information do mariners need for safe navigation in the Arctic? With new promising marine connectivity/internet services becoming available, what communications methods/channels/solutions/services will mariners use?
- What is a model to support persistent and effective monitoring of the northern U.S. maritime and terrestrial border in the Arctic without physical human presence?
- Illegal, Unreported, and Unregulated (IUU) fishing is a pervasive global maritime security threat. By undermining international agreements and fisheries conservation measures, IUU fishing jeopardizes food security and economic security, with pronounced destabilizing effects on vulnerable coastal states.
    - What emerging technologies and methods exist that could be applied to the protection of Living Marine Resources and economic security?
    - When and where might fisheries across the Arctic evolve and necessitate DHS enforcement and protection of fishing fleets and resources?

Topic 1C. Trend Analysis of Dynamic Human and Non-Human Systems in a Changing Environment

- How do the dynamic changes in the Arctic environment (environment includes: physical, commercial activity, wildlife migration, strategic / geopolitical, etc.) impact operations, planning, policy, and other national security risks?
- How will climate related changes impact resilience and reliability of critical infrastructure?

- How will national security infrastructure (ports and oil pipelines) be impacted by sea-level rise and permafrost thaw and coastal erosion over the next 50-100 years?
- At what rate are conditions such as coastal erosion or thawing permafrost threatening existing Arctic communities? How are they being impacted, and how are those impacts being addressed locally and nationally?
- How do we forecast trends of maritime activities (e.g., maritime shipping, fishing, tourism, natural resource exploration/exploitation) in the Arctic? How can this be modeled? What will the trends look like 20 years from now? 50 years from now?
- Conditions in the Arctic are changing, including geo-political shifts and strategies. For example, the current *Ten-Year Projection of Maritime Activity in the U.S. Arctic Region, 2020-2030*[17] is a reference for Arctic activity, often applied to Arctic Marine Spatial Planning. However, major factors underlying this document's conclusions have shifted, including an unprecedented demand for Liquefied Natural Gas (LNG) due to the Russian-Ukraine territorial war. These geo-political influences may alter the projections documented by the U.S. Committee on the Maritime Transportation System and are worthy of re-examination.
    - Given the geo-political changes in the Arctic region, as well as changes in costs and demand of marine fuels and LNG, what are the projected trends in Arctic marine traffic from 2024 through 2034? How will these changes impact homeland security mission risk and execution?
- Is human migration take place in the Arctic? What is the potential for it to take place in the future? What are the factors that influence human migration, and what tools can be developed to identify and predict migratory patterns? What tools or capabilities would be needed for DHS and the broader HSE to respond to mass migration in or through the Arctic?

Theme Area Two: Improve Understanding of Risks and Potential Impacts

The Arctic region presents unique strategic and operational risks for the HSE. This includes climate-related impacts to lifeline infrastructure,[18] adversaries' ability to impact strategic trade routes, impacts to local food supply, increased pollution, and difficulty in maintaining safety for maritime operations due to increasing operational and commercial traffic.[19,20] These risks are compounded by a changing geographic environment, which both elevates the risk of more frequent and severe environmental impacts, but also may open previously inaccessible/partially accessible resources and trade routes. Without innovative strategies, approaches, and tools, increased activity across the Arctic could outpace DHS's ability to detect, deter, prevent, and respond to these changes and mitigate the growing risks.

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[17] 2019 U.S. Committee on the Maritime Transportation System, A Ten-Year Projection of Maritime Activity in the U.S. Arctic Region, 2020 – 2030: https://www.cmts.gov/assets/uploads/documents/CMTS_2019_Arctic_Vessel_Projection_Report.pdf
[18] FEMA Community Lifelines: https://www.fema.gov/emergency-managers/practitioners/lifelines
[19] 2019 USCG Arctic Strategic Outlook: https://www.uscg.mil/arctic/
[20] 2019 Congressional Research Service (CRS) Report, Changes in the Arctic: Background and Issues for Congress: https://crsreports.congress.gov/product/pdf/R/R41153/144

The Arctic region is changing faster than other regions in which the HSE operates.[21] As conditions in the Arctic evolve, many systems within the region – including critical infrastructure – will experience changes in operating and resilience requirements. Arctic infrastructure is critical for sustaining communities and maintaining operational capability in the Arctic region. Seventy percent of all Arctic infrastructure lies atop near-surface permafrost that is at risk.[22] These changes do not happen in isolation – changes among (and risks to) the Arctic's natural and human systems can have cascading and compounding impacts due the dynamic and interconnected nature of these systems, to include changes observed among physical, biological, and socioeconomic systems.[23] Understanding these interactions is important to understanding how the Arctic operational environment is changing and how those changes impact HSE operations. DHS must understand the lifeline infrastructure systems that support homeland security operations in the Arctic, the interdependencies between them, and work with infrastructure service providers[24] to improve resilience against constraints and challenges associated with operating in the Arctic. DHS seeks to better understand Arctic systems, how they interact with and impact each other, and how to better enable them to be resilient and recover from disruptions.

DHS responsibilities in the Arctic include enhancing critical infrastructure security, , responding to and recovering from disasters, law enforcement operations (protection of trade and travel), search and rescue, pollution prevention and response, protection of fisheries, and enhancing the security and safety of the Maritime Transportation System (MTS). To support Arctic risk management, hazard mitigation, emergency preparedness, and overall homeland security in the Arctic, DHS needs research that "promotes an understanding of disaster risk exposure, sensitivity to hazard, and adaptive capacity."[25]

The ability to assess risks and understand potential impacts from disruptions is key to maintaining operational capability in the Arctic region. The ability to manage risk requires a well-informed understanding of environmental conditions and their projected changes over time. DHS seeks innovative mechanisms to assess the homeland security risks and opportunities as well as potential impacts to Arctic communities, critical infrastructure (including the maritime transportation system), and trade and travel routes from changing environmental conditions (i.e., permafrost thaw, sea level rise, ice flows, stronger storms).

Below are representative research questions of interest to DHS by topic (questions not listed in priority order):

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[21] Interagency Arctic Research Policy Committee of the national Science and Technology Council Arctic Research Plan 2022 – 2026: https://www.iarpccollaborations.org/plan/index.html
[22] U.S. Arctic Research Commission, Report on the Goals and Objectives for Arctic Research 2019 – 2020: https://www.arctic.gov/goals-and-objectives/
[23] Interagency Arctic Research Policy Committee of the national Science and Technology Council Arctic Research Plan 2022 – 2026: https://www.iarpccollaborations.org/plan/index.html
[24] CISA Critical Infrastructure Sectors: https://www.cisa.gov/critical-infrastructure-sectors
[25] Interagency Arctic Research Policy Committee of the national Science and Technology Council Arctic Research Plan 2022 – 2026: https://www.iarpccollaborations.org/plan/index.html

Topic 2A: Foundational Risk Assessment and Analysis for Operations

DHS has numerous risk assessment tools, such as CISA's National Risk Management,[26] FEMA's Threat and Hazard Identification and Risk Assessment (THIRA),[27] and FEMA's National Risk Index.[28] Changing conditions in the Arctic require new foundational baselines and approaches for risk assessment and analysis.

- How do we categorize and measure homeland security risks in the Arctic pertaining to the following?
    - Increasing access and trade and travel
    - Communities and disaster resilience
    - Increasing vessel traffic and the maritime transportation system
- Alaskan Area Committees are comprised of federal, state, local, and tribal representatives as well as other stakeholders. As required, each Area Committee incorporates Worse Case Pollution discharge planning factors into its Area Contingency Plan.
    - What analytical approaches could be applied to determine if current pollution response capabilities and logistical considerations are adequate?
    - What analytical approaches could be applied to assess potential solutions to improve efficacies?

Topic 2B: Risk Management for Crisis Response

- Intentional wellhead ignitions are a tactic that may be used to combat a wellhead blowout (e.g., uncontrolled release of crude oil from a wellhead at the surface or subsea).
    - What are the environmental implications for using this tactic in the Arctic should it be recommended?
    - What are the environmental trade-offs for a wellhead ignition?
    - What are the risks involved and implications for using intentional oil wellhead ignition as an operational tool for a Federal On-Scene Coordinator's Representative (FOSCR) during a worst-case scenario?
- The Government Accountability Office (GAO) has recommended to the USCG and EPA to conduct assessments or ecological risk assessments, examining the potential effects of subsurface use of dispersants on ocean ecosystems in regions where this is a viable response option.[29] Use of dispersants is considered a viable response option for the north slope of the Arctic, and in other areas located near oil infrastructure. An ecological risk assessment and modeling of subsurface use of dispersants in the Arctic needs to be completed to advance oil spill response preparedness efforts.
    - What are the ecological risks and potential effects of subsurface use of dispersants on Arctic marine ecosystems?

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[26] CISA National Risk Management: https://www.cisa.gov/national-risk-management
[27] FEMA National Risk and Capability Assessment: https://www.fema.gov/emergency-managers/risk-management/risk-capability-assessment
[28] FEMA National Risk Index: https://hazards.fema.gov/nri/
[29] GAO-22-104152, Offshore Oil Spills: Additional Information is Needed to Better Understand the Environmental Tradeoffs of Using Chemical Dispersants: https://www.gao.gov/products/gao-22-104153

    - Is this a viable response option for the north slope of the Arctic, and in other areas located near oil infrastructure?
    - How can the use of subsurface dispersants and their risks be modeled?
- There is no baseline data on the reliability of lifeline infrastructure systems[30] in the Arctic.
    - What is the status of reliability of Arctic infrastructure?
    - What infrastructure dependencies and interdependencies exist?
    - What lifeline infrastructure failures have there been in the past?
    - What failures are most likely in the future?
    - What planning and decision-making procedures may enable more effective prioritization of infrastructure investments to improve resilience?
- Telecommunication systems are often heavily reliant on energy systems at critical infrastructure nodes.
    - Should a loss of power occur, what are the impacts, and how can DHS better secure and build redundancy to prevent the direst impacts?
    - What interdependencies exist within the Arctic telecommunication infrastructure that, if impacted, would have a negative impact to telecommunications in the Arctic?
- The Arctic environment is rapidly changing, with the consequences most acutely being felt by the Indigenous and local communities of the region. Any investigation into how to make the Arctic domain more resilient and secure must take into consideration the ecological and geophysical impacts of a changing climate on Indigenous and local communities and consider their approaches to sustainability.
    - What are the social and ecological interdependencies in the Artic region, and what are the areas where the capacity to adapt and change can occur?
    - Where do critical gaps to sustainability exist and pose a threat to the homeland security of the region?

Theme Area Three: Enable Adaptation for Resilience

The capacity to adapt to changing conditions is a key component of resilience for the HSE. This includes adjustment to actual or expected conditions, strengthening capacity to mitigate impacts, and enhancing reliability, availability, and recoverability of human and natural systems. *Resilience* refers to the ability to adapt to changing conditions and withstand and rapidly recover from disruption.[31] Climate resilience includes the "ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from climate related disruptions, challenges, and risks through adaptability, innovation, and preparedness."[32] While the Department leverages the work of scientific agencies such as the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA), DHS needs the science and engineering capacity to translate that science into impacts and solutions that support DHS components.[33]

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[30] FEMA Community Lifelines: https://www.fema.gov/emergency-managers/practitioners/lifelines
[31] 2018 DHS Resilience Framework: https://www.dhs.gov/sites/default/files/publications/dhs_resilience_framework_july_2018_508.pdf
[32] 2016 DHS Directive 023-03, Climate Resilience: https://www.dhs.gov/sites/default/files/publications/mgmt/environmental-management/mgmt-dir_023-03-climate-resilience.pdf
[33] 2018 DHS Resilience Framework: https://www.dhs.gov/sites/default/files/publications/dhs_resilience_framework_july_2018_508.pdf

Decision-makers across DHS need to understand the impacts of climatic trends on their mission space, including Maritime Security, Critical Infrastructure Protection and Resilience, Disaster Response and Recovery, Hazard Mitigation, Border Security, and Protection of Trade and Travel.

Developing the information and resource capacity to achieve these priorities is key in enhancing the resilience of DHS operations, critical infrastructure, industry, and communities in the Arctic. Infrastructure systems, including those used to supply electricity, heat, water, and communications, and to enable transportation, must be resilient to changing conditions to sustain and improve the quality of life of Arctic communities and meet federal, state, local, and tribal needs.[34] Enabling resilient infrastructure systems in the Arctic will require capacity to conduct monitoring and maintenance to meet current demand, and research to inform adaptation to future environmental, demographic, and geopolitical shifts.[35] Resilience to man-made and natural events is often dependent on reliable, interoperable communications and associated infrastructure so that different communities can talk to one another and offer mutual aid. There are significant differences in communications infrastructure such as broadband access in the Arctic and its Indigenous and remote communities compared to the continental United States. DHS seeks new planning and analysis methods and tools to enable and adapt homeland security capabilities and infrastructure to address the risks and potential impacts from changing conditions in the Arctic.

Below are representative research questions of interest to DHS by topic (questions not listed in priority order):

Topic 3A: Operational Adaptation for Security (multiple problem statements)

- How do we adapt capabilities across the HSE to address the likely impacts from changing conditions in the Arctic?
- The timeframe and location of activity as well as the demand signal for various DHS missions in the Arctic continues to evolve at unprecedented rates. Building permanent infrastructure or permanently establishing bases may inadvertently position these elements in the wrong locations within a short period of time. Yet, in some cases the Arctic also lacks the necessary infrastructure to enable the USCG to quickly surge where and when needed for sustained operations.
    - To increase mission effectiveness, what are unique ways or practices that would enable the USCG, FEMA, CISA, CBP, or other DHS components to quickly surge into and across the Arctic when and where needed? For example, would it be practicable and efficient to build basic elements such as building pads and water/electrical connections where USCG and other DHS components could quickly deploy?
        - This would include the ability to rapidly deploy shelters for USCG crews and other DHS responders as well as people from a mass rescue event or temporary shelters in communities impacted by natural disasters. The upper end of the

[34] U.S. Arctic Research Commission, Report on the Goals and Objectives for Arctic Research 2023 – 2024: https://www.arctic.gov/goals-and-objectives/
[35] Interagency Arctic Research Policy Committee of the National Science and Technology Council, Arctic Research Plan 2022 – 2026: https://www.iarpccollaborations.org/plan/index.html

spectrum could include the ability to deploy portable or temporary hangars for fixed wing or rotary wing assets and crews.

- Increased open water in the Arctic means increased risk of icing for ships. This has already been a challenge for USCG cutters and will be challenging for other ships as well. Active (i.e., electrically conductive) anti-icing paints exist, and "ice-shedding" paints also exist, but are not compliant with USCG ship paint requirements.
    - Are there emerging technologies / materials available, or that can be developed to mitigate and prevent ice buildup on vessels, cutters, buildings, towers, and other infrastructure that comply with USCG requirements?
- How can we adapt homeland security disaster response and recovery capabilities to address changing conditions in the Arctic? What approaches are working well in the Arctic and how can those successes be replicated and scaled to accelerate disaster resilience?

Topic 3B: Planning and Analysis for Future Conditions

- How do we need to adjust DHS risk and operational planning and models so that they are valid for the Arctic region? What types of coordination frameworks would best enable adaptive planning across the HSE?
- How do commercial vessel carriage requirements need to evolve as the Arctic environment continues to evolve?
- How can we better anticipate and plan for changing trade and travel patterns?
- How can we bolster and invest in Arctic communities, including remote and Indigenous populations, to enable whole-community resilience and adaptation to the impacts of climate trends?
- What international best practices and lessons learn can we apply to DHS operations, equipment, sensors, deployments, and maintenance in harsher environments?

Topic 3C: Advanced Technologies and Tools for Remote and Harsh Operating Conditions

- There are very few resources/infrastructures to support oil spill response operations in the Arctic. This includes options for temporary storage and transport of recovered oil/waste. Decanting and burning of waste are two solutions that are often controversial. This is a common issue across the international community. Temporary storage is often insufficient to support a large spill in remote areas. What emerging technologies or solutions exist to eliminate the need for extensive temporary storage of oily waste in the Arctic?
- What fixed and deployable power solutions are available to power remote operations and/or equipment in the harsh Arctic environment?
- Changing conditions, such as sea level rise, permafrost loss, and extreme weather events, may increase risk to regulated bulk oil facilities in the Arctic.
    - What mechanisms are available or can be created to help identify and visualize potential risks?
    - What technology solutions are available or can be developed to reduce potential risks to these facilities?

Topic 3D: Building Capacity to Adjust to Future Conditions

- How can day-to-day resilience contribute to disaster resilience?
- Solar storms are a common phenomenon that occur with little time to prepare. As the region grows its telecommunications infrastructure, the impacts of a prolonged or severe solar storm may be significant. What current measures are in place to address the resiliency of the telecommunications network in the Arctic during these events, where do critical gaps exist, and what can be done ensure telecommunications are sustained during the worst-case scenarios? What measures can DHS take to build resiliency and maintain continuity of telecommunications in the Arctic during a prolonged meteorological event (i.e., solar storm)?
- Given the remoteness of many locations in the Arctic, the response to any manmade or natural event will often be reliant on multiple communities or entities offering mutual aid. However, given the overall lack of the broadband infrastructure outside the major population centers in the region, the ability to communicate in real-time is problematic and poses security risks. Any research into how to build out reliable infrastructure in the region should take into consideration the buildout of a reliable broadband network, particularly to the Indigenous and local communities that have historically been underserved, and which may be on the front lines of a national or international security event given their proximity to international borders.
    - What can be done to identify the risks as existing telecommunications infrastructure evolves, such as the decommissioning of legacy systems and the advent of new systems. For example, the evolution of 3G to 5G broadband networks?
    - What can be done to ensure access remains reliable and secure in the face of a changing ecological environment?

Theme Area Four: Expand Collaboration and Cooperation across the Homeland Security Enterprise

Every U.S. Arctic strategy, to include the newly released *National Strategy for the Arctic Region*,[36] calls for increased collaboration and cooperation across the HSE. Local and indigenous communities; industry; international organizations; and federal, state, local, and tribal agencies are all essential partners in this effort. The Arctic region has unique cultures and social norms that must be respected and integrated into science, risk management, and policymaking. Indigenous communities have lived in the Arctic for centuries and have an immense amount of knowledge and history that has been handed down. Knowledge from across the HSE is needed to inform operations and planning for emergencies in the Arctic. DHS seeks knowledge and technology tools on how to improve collaboration and cooperation across the HSE.

As one of only eight Arctic nations, the United States' participation in intergovernmental consensus-building forums such the Arctic Council and in international governance structures such as the International Maritime Organization highlights the importance of cooperation and collaboration to jointly work together in identifying knowledge, science, and technology gaps, and develop solutions to reduce regional risk. All of these partnerships are key to ensuring the Nation's long-term interest in

[36] 2022 National Strategy for the Arctic Region: https://www.whitehouse.gov/wp-content/uploads/2022/10/National-Strategy-for-the-Arctic-Region.pdf

the region. An important building block to this effort is cultivating a diverse HSE workforce with specialization in Arctic science, engineering, environmental justice, and policy making. DHS seeks training, education, and outreach to enable the homeland security workforce to effectively and collaboratively engage with partners in the Arctic working together across the HSE.

Below are representative research questions of interest to DHS by topic (questions not listed in priority order):

Topic 4A: Training, Education, and Workforce Development

- How do we educate and train the homeland security workforce for the nuances of Arctic operations, including a better understanding of local cultures and social norms?
- What are some approaches to educating mariners on proper configuration of safety equipment and emergency/distress communications (i.e., the Global Maritime Distress and Safety System)?

Topic 4B: Outreach and Engagement

- How can public/private partnerships be leveraged to improve homeland security mission effectiveness/efficiencies?
- How can DHS better assess and understand the potential and actual impacts of its investments, operations, and policies on local communities?
- Knowing the barriers and obstacles villages face to bring their fuel storage facilities into regulatory compliance may prove beneficial to the economies of the region. Overcoming these obstacles will reduce environmental risks and help support traditional lifestyles. What are the primary barriers to regulatory compliance throughout the Arctic? How do we overcome them?
- How can we leverage public-private partnerships to improve USCG and/or other DHS components' mission effectiveness and efficiencies?

Topic 4C: Collaboration with Local Communities

- How can we better support the needs of Indigenous and local populations and integrate their traditional knowledge into science-based policy and decision making?
- How can we better integrate Indigenous and local knowledge into operational and contingency planning in the Arctic and ensure that the needs of these communities are being represented?
- The Arctic environment is rapidly changing due to climate impacts, with the consequences most acutely being felt by the Indigenous and local populations of the region. Any investigation into how to make the Artic domain more resilient and secure must take into consideration the ecological and geophysical impacts of climate change to the region, as well involve Indigenous and local communities that are most impacted by Arctic climate change and have developed unique approaches to sustainability.
    - How can DHS better collaborate with Indigenous and local communities in the region in order to identify realistic and sustainable solutions needed to build resiliency in the Arctic in the face of a rapidly changing ecological and geophysical environment?
    - How can DHS best leverage its existing programs focused on community planning and hazard mitigation to reduce existing risk and strengthen communities?

h. Application Project Narrative

This NOFO has three sections that align with the evaluation and selection process.: (Section A) NOFO Description, (Section D) Application and Submission Information, and (Section E) Application Review Information.

The below section outlines requirements, and maximum page counts, for the Project Narrative portion of the application package. The Center narrative is limited to 69 single-spaced pages with 12-point font, Times New Roman, and one-inch margins. For applicants who have previously led a DHS S&T COE, the Center narrative is limited to 75 pages to include a summary of their past performance as a DHS COE (if applicable)**.** Pages in excess of the page limitations will not be reviewed. This page limit is inclusive of tables, charts, illustrations with captions, etc.[not included in the Center Narrative 65-page limit are the budget and investigators' credentials, past performance, or appendix.] The below section outlines specific requirements, and maximum page counts, for the Project Narrative portion of the application package.

I. Strategic Approach (3 pages)
II. Research Program (35 pages)
III. Education and Workforce Development Program (12 pages)
IV. Management and Administration (19 pages)
    a. Leadership (5 pages)
    b. Communications and Outreach (3 pages)
    c. Transition (8 pages)
    d. Program and Project Evaluation (3 pages)
V. Past Performance (6 pages) (Only applicants who have previously led a DHS S&T COE)

I. Strategic Approach (3 pages)

Describe the strategic approach for achieving the overarching vision, mission, and goals for this Center. Include the following:

- The overall focus of the Center, including a discussion of the proposed research themes and state of the art scientific approaches relevant to this scope.
- The key milestones to achieve the Center's goals for each year of the Center's period of performance (10 years).
- The key functions within the Center and how they will work together as an integrated system to achieve the vision, mission, and goals.
- The key strategic partnerships needed to ensure the successful implementation of the Center's research and education program and delivery of research outputs, tools, and technologies to end users.
- How the Center will work through those key strategic partnerships and with other HSE stakeholders to:
    - Engage target customers in problem framing and solution testing
    - Develop, test, and evaluate the outcomes of the research
    - Evaluate the project progress, integrate projects into capabilities, and determine the appropriateness of the proposed solutions to the culture

and resources of the target users
- Maintain situational awareness and managing projects within a portfolio designed to increase responsiveness to emerging events and scientific advancements

II. Research Program (35 pages)

Applicants must propose a research program to address each of the research themes and a selection of topics outlined above in Section A-9-d "Research and Education Themes, Topics, and Questions."

Each theme is organized into major topics that are related to the mission areas of DHS, other federal agencies, state, local, and tribal governments, and the private and nonprofit sectors. Within each topic is a list of research questions. Successful proposals must address all themes; however, DHS does not expect proposals to address every topic within a theme or every question within a topic. Applicants should select topics and questions within a theme area, explain why they selected these topics or questions, and describe a proposed method, metrics, and outcomes to answer the relevant questions. **Include at least one research project for each research theme in this NOFO for which the Center has a high level of expertise and capability.**

Key aspects to keep in mind when developing a proposal to become the lead university for a DHS Center of Excellence.

- COE research is expected to make a difference, producing tangible, implementable results, including tools, technologies, and knowledge products (e.g., best practices, resource guides, case studies) for use in improving operations, decision-making, and policy across the homeland security enterprise HSE. This requires university faculty to spend time working with customers and stakeholders to better understand their needs, including engaging with operational and decision-making personnel to find opportunities to use science and technology to enhance homeland security capabilities. Therefore, COEs should anticipate interacting with homeland security partners and stakeholders and other SMEs.
- COEs are interdisciplinary by nature and design. DHS expects COEs to engage researchers from a variety of disciplines to tackle complex problems. Applicants should describe interdisciplinary, comprehensive, problem-based approaches to research and education in each of the major theme areas that include faculty, students, and Center leadership.
- Researchers and analysts must be able to obtain access to needed analytical products, relevant data, and open source and publicly available information. Applicants must discuss any needs for unique or government furnished 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. See Data

Acquisition and Management Plan in Section A.10 of the Cooperative Agreement Terms and Conditions (Appendix A).

The Research Program should consist of: (a) an overview of the research program, and (b) specific project proposals.

Each project proposal must include a transition plan and the characterization of the stage of maturity [e.g., Technology Readiness Level (TRL)] for each research effort, including how each effort will advance through discovery, testing, evaluation, development, and transfer or transition results (e.g., tools, technologies, knowledge products) into use within the HSE. This includes plans to pursue intellectual property protections and to support the transfer of research to those capable of further developing the technology or service (i.e., commercial, government or FFRDC partners). See Section IV.c., "Transition," below for requirements on how to propose projects using the stage-gate methodology.

In addition, DHS requires applicants to outline two example End to End (E2E) projects in their research program in different theme areas to demonstrate their ability to work in complex, multi-faceted teams, and to carry research projects through multiple stages to a beneficial outcome. The E2E approach is an OUP research and development management strategy designed to develop cutting-edge, practical solutions to improve HSE operations, and to efficiently transition those improvements from COEs to DHS components and HSE partners. E2E projects necessitate continuous involvement by relevant parties throughout the project's lifetime, early development of a transition strategy, and end users' commitment to use results and facilitate partnership activities, such as hosting faculty and students. For more details on the required E2E projects, please see Appendix C.

DHS welcomes applicants to suggest a range of innovative approaches to generate excellent and relevant research, while exposing students and faculty to real-world challenges.

Applicants must demonstrate a working knowledge of the scientific landscape, the quantitative methods, policies, and findings relevant to the topics in this NOFO through literature reviews, analysis of alternative approaches, and market-based assessments of related/emerging technology.

(a) Applicants must include the following in their **research program overview**:

- Introduce the research themes, topics, and projects of this COE and how they collectively provide a comprehensive, interconnected approach that supports the vision and goals of the Center.
- Each theme should have a lead investigator that will monitor projects that relate to the theme and promote efforts that foster collaboration

and synergy.

- Include at least one research project for each research theme in this NOFO for which the Center has a high level of expertise and capability.
- Explain which projects will be integrated and how the applicant will integrate those projects to form a coherent approach to achieve the Center's goals. Describe the maturity and state-of-the-art of the respective theories, technologies, and applications of the proposed areas of study to homeland security.
- Describe an interdisciplinary approach that incorporates researchers from a variety of academic disciplines and practices with the goal of producing a more effective comprehensive solution.
- Describe the Center's strategic approach to incorporating open competition into the development of future research project proposals.
- Demonstrate that the Center and principal investigators have a high level of expertise in the areas in which they propose research. This includes providing a comprehensive bibliography of a principal investigator's own and others relevant publications. Omitting these supporting documents may result in DHS dismissing a proposal without review. Applicants should provide a bibliography under "Bibliography & References Cited."
- Demonstrate knowledge of the operational environment for which the outputs of the research are intended.
- Discuss any unique data, testing, or laboratory facilities that will be required to conduct the research and how the applicant will ensure its researchers can access the data and facilities prior to funding.
- Describe how intellectual property will be identified and managed, including milestones to protect intellectual property and to pursue the transfer or transition of results (e.g., tools, technologies, knowledge products) into use.

(b) Applicants must include the following elements for each project proposed. Applicants may submit **up to 10 research projects total**.

Submit project proposals for the first two years that either end with a discrete output or that describe in detail the continuing steps necessary to develop a final capability useful to DHS. Project proposals shall demonstrate how they support relevant DHS Strategic Plan program goals and objectives (see section 9.d.). Proposals should be descriptive in detail and include stages of R&D (see pages 16, 25-26). Please note that Center projects are funded in 1-year increments, with future funding dependent on research excellence, progress, relevance, and utility.

- Title
- Principal investigator(s) [name, title, organization (e.g., school, business, non-profit)]
- Other key technical and project personnel supporting intellectual property and administrative tasks [name, title, organization (e.g., school, business, non-profit)]
- Significant partners and their roles
- Specifically identify which theme area and topic the project addresses and whether it is one of the two required example E2E projects **-** *if a proposed project falls under multiple themes/topics, identify those as primary, secondary, tertiary, etc.*
- Project Abstract
- Project Research Plan
    - Goals and objectives of the research
    - Background/context of the research problem:
        - Technical capability or knowledge gap this project addresses and what DHS Office aligns with the gap
        - Identify and demonstrate which DHS Strategic Plan program goals and objectives the project is intended to support (see section 9.d.).
    - Research significance of the project:
        - How the work builds upon the state-of-the-art of the respective theories, technologies, and applications of the proposed areas of study
        - How the work represents an improvement (incremental or fundamental change) to the current operational posture being used
    - Approach and Methods:
        - Theoretical approach, hypothesis to be tested
        - Methods, including study design, data collection, analysis
        - Technical technology performance metrics being tested (e.g., specificity, sensitivity, cost, etc.)
    - Expected outputs and outcomes and how those outputs would be used (e.g., potential real-world applications)
    - Data access plans should data be needed to execute the project
    - Total projected costs per year for two years and forecasted costs for up to five years
    - Relevant Citations
- Project Transition Plan - <u>See IV.c., "Transition," below for requirements on how</u> <u>to propose projects using the stage-gate methodology.</u>
    - Transition or transfer pathway to include identifying the key technical scientific and development steps necessary to get results (e.g., tools, technologies, knowledge products) into use within the HSE.
    - Characterization of the stage of maturity (e.g., Technology

Readiness Level (TRL)
- The stages and gates that will be used to evaluate the technical progress and efforts to frame the business environment that the resulting outputs will affect
- Identification of partners (e.g., commercial, non-profit, government) with the necessary complementary assets needed to realize the technology/approaches/concepts
- A year-by-year description of key milestones and the schedule for the project for the first **two years**

III. Education and Workforce Development Program (12 pages)

Applicants must propose a plan for an integrated education and workforce development program across the Center's core science, technology, engineering, and mathematics (STEM) disciplines.

This program should include innovative initiatives to educate students in both theoretical and methodological underpinnings of the relevant disciplines, as well as practical applications for homeland security operations. As part of this, applicants should describe how they would embed their students and faculty, individually or in teams, with homeland security practitioners to conduct research, and foster opportunities for students to gain practical experience in homeland security-related professions. Applicants should also describe how they would integrate homeland security-related courses of study into existing STEM degree programs. Additionally, applicants should describe how their Center would provide and enhance technical education and training programs for HSE and DHS professionals, for example, at USCG, CISA, FEMA, CBP, SLTT first responders or specific training Centers such as the Federal Law Enforcement Training Center (FLETC), and the Emergency Management Institute.

The overarching goals of a COE's education and workforce development program are to:

- Build capacity in applying STEM disciplines to support homeland security.
- Enhance and improve the technical knowledge base of homeland security professionals, including strengthening the science, engineering, and analytical capabilities of the homeland security workforce, both current (i.e., professional development) and future.
- Diversify the homeland security technical workforce by building homeland security science, engineering, and analysis capacity at MSIs
- Link students and researchers to practitioners in operational settings to develop more robust tools, technologies, and capabilities
- Teach students and professionals the business elements of transitioning emerging concepts into the commercial or government markets

DHS encourages proposals that include plans to integrate workforce

development initiatives with other COEs, DHS Components, other federal or state government agencies, and FFRDCs that have homeland security missions.

The introduction to this section must clearly describe how the education initiatives would connect with the research program to support the vision and goals of the Center.

Education and workforce development program activities include:

- Developing undergraduate, graduate, or professional career enhancing programs that support the COE's research program.
- Partnering with the private sector to create internships/co-ops for students in relevant areas to learn the business of managing science and developing products and services.
- Applying existing disciplines to homeland security through development of curricula, concentrations, minors, and certificates within established degree programs.
- Building homeland security capacity at MSIs. Please visit the following link for a list of accredited U.S. post-secondary institutions that meet the statutory criteria for identification as MSIs: http://www2.ed.gov/about/offices/list/ocr/edlite-minorityinst.html.
- Offering continuing education opportunities for first responders and homeland security professionals.
- Offering student internship, scholarship, or fellowship programs that provide homeland security research experience.
- Developing community college partnership programs to attract a diverse population of students and teachers into homeland security science and engineering disciplines.
- Offering homeland security related research opportunities to students.
- Embedding students and faculty in research projects at DHS or other operational agencies within the HSE. For many homeland security agencies, this is limited to U.S. citizens eligible for clearances.
- Develop sustainable, institutionalized education offerings that continue to be available after the grant ends.

Applicants must include the following elements for each project. Applicants may submit **up to five workforce and professional development projects total**.

- Title
- Principal investigator(s) [name, title, organization (e.g., school, business, non-profit)]
- Other key technical and project personnel supporting intellectual property

and administrative tasks [name, title, organization (e.g., school, business, non-profit)]

- Significant partners and their roles
- Specifically identify which theme area and topic the project addresses
- Project Abstract
- Project Plan
  - Goals and objectives of the project
  - Significance of the proposed project to homeland security (i.e., mission relevance, capability or knowledge gap the project addresses, relevant citations to express workforce needs of DHS) and expected outcomes
  - A description of how the project aligns with and integrates into the Center's research program
  - The method that will be used to evaluate technical and programmatic progress
  - A description of how the Center would track specific measures of success, (i.e., the number of students who graduate with homeland security relevant degrees; the number of students that participated in homeland security-related internships or research activities; the number of students that successfully obtained homeland security-related employment; the number of homeland security-related conference presentations given; the number of homeland security-related papers published; and/or the number of homeland security-related awards or prizes received)
  - A year-by-year description of key milestones for the project for the first two years
  - Total projected costs per year for two years and forecasted costs for up to five years
  - Letters of support from organizations agreeing to host interns (this may be included in an Appendix under "Other Attachments" of the application)

IV. Management and Administration (19 pages)

a. Leadership (5 pages)
b. Communications and Outreach (3 pages)
c. Transition (8 pages)
d. Program and Project Evaluation (3 pages)

Centers generally have designated staff leading each of the major functional areas and center budgets are tied to the following major functional areas: Administration & Execution, Research & Development, Education & Training, Customer Outreach & Communication, and Transition (See Appendix A: Terms and Conditions).

a. Leadership (5 pages)

A DHS COE requires a committed and sustained leadership team that establishes a strategic vision and direction for the Center. Successful COEs have a dedicated and unified leadership team that establishes a strategic vision and direction for the Center. The leadership team must clearly communicate the Center's goals and DHS's expectations to all partners in its network. The COE must be responsive to DHS requests for information and assistance. Center management teams are responsible for managing, coordinating, and supervising the entire range of Center activities (e.g., administration, program/project evaluation, business operations, financial management, collaboration/integration, communications and outreach, education, research, and transition).

Center leadership must ensure cohesive management and administration through clear internal communication. COE leads and partners must be responsive to DHS requests for information and assistance. Center Lead institutions should obtain a Letter of Support from their university leadership to demonstrate a long-term university resource and administrative commitment to support the COE.

The Center must appoint or hire either a full-time Director or Executive Director. OUP's experience has shown that part-time Directors have difficulty managing all of the demands placed on a COE, as well as their other duties. The Center Director should expect to work closely with the DHS Program Manager and have an effective and dynamic working relationship with DHS. Center Directors are ultimately responsible for managing all Center activities and ensuring they are productive and actively engaged in conducting impactful research and education that benefits DHS and the HSE. **Center Directors must be U.S. citizens who are eligible for a government security clearance.** DHS expects the Center Director to spend 1-3 months working onsite with DHS operators in the COE's first year to fully understand the operational environment and requirements necessary for the successful transition of the work performed at the COE.

Expectations for COE Coordination and Integration with the HSE

A successful COE fosters relationships and collaborative efforts among its partners and embraces researchers who are committed to the goals of the COE and DHS. Effective Center leadership and communication ensures all partners understand their responsibilities and how their research supports the mission of the COE and DHS. DHS strongly encourages collaborative research or education projects with existing COEs. COEs must strategically engage to maximize the return from their research and education programs through collaboration and integration both within the COE's own consortium and

across the COE network. This Center will be a fully integrated component of the network of COEs and will take advantage of the network's resources to develop mission-critical research, education, and transition programs. COEs are encouraged to form associations with other federal agencies (including the National Laboratories); existing COEs; research laboratories; state and local homeland security and law enforcement agencies; and public and private entities. Applicants should plan to: (1) integrate proposed work with that of other COEs as feasible, and (2) develop methods to ensure that Center work leverages and complements, and does not duplicate, other COEs' research or data collection efforts. Applicants should show they can leverage and integrate their efforts with the network and other DHS R&D efforts, while introducing new activities that broaden capabilities and results. For a list of current COEs and their capabilities, go to http://www.dhs.gov/st-centers-excellence.

The Leadership section must include the following elements:

- The organizational structure and charts for the Center management and administration as well as the COE as a whole
- The Center Director and Center staff responsible for each major COE activity (e.g., leadership, management, administration, program/project evaluation, business operations, financial management, resource management, collaboration/integration, communications and outreach, education, research, strategic planning, and technology transfer/transition). Include a description of the major responsibilities for each member of the leadership and management team. Discuss how team members will work together to ensure successful operation of the Center.
- How the Center will leverage the resources or take advantage of the resources available within the lead institution's existing complex (e.g., university technology transfer offices, sponsored research offices, communications offices, or other departments that can contribute to business plans, marketing plans, and communications)
- How the Center will construct a plan and schedule describing the specific business steps needed to execute subcontracts, identify data needs and the acquisition of such data, establish intellectual property sharing agreements, and engage customers to refine proposals into a work plan. The Center will be required to have these elements in place within 6 months following award.
- How the COE and the university will make decisions pertaining to transferring intellectual property and under what timeline (see also the requirements under the transition section in this NOFO)
- Any major committees (e.g., steering committees, advisory boards, industry panels, customer working groups) that will be established to guide Center activities and functions. Include a description of committee roles, responsibilities, proposed membership composition, and how committee guidance will be implemented by Center management and administration.

- A plan for how the Center will foster center-wide coordination and integration with the HSE:
  - Foster relations and collaborative efforts among all partners;
  - Ensure partners adhere to their responsibilities as research partners;
  - Disseminate effective internal communications across the Center partners to promote a common mission;
  - Engage stakeholders in Center activities;
  - Identify and build upon or complement related work across the existing OUP COE Network.
- Describe any unique partnerships, capabilities, or other resources the proposed Center would bring to the COE Network.

b. Communications and Outreach (3 pages)

Effective external communications with DHS and other stakeholders are also essential elements of successful COE operations. Lead institutions must have communications and outreach expertise within the Center administration to ensure effective, professional, high-quality communications products. Successful applications will include a strategic plan for communicating about the Center and its results to DHS and other key stakeholders. Typical COE communications include websites, fact sheets, newsletters, press releases, annual reports, webinars, and lists of SMEs and resources available to stakeholders. DHS encourages COEs to leverage capabilities and resources offered through their university or their partner universities, which may include public affairs offices, media affairs offices, federal affairs offices, technology transition offices, and academic centers (e.g., schools of business, marketing, or journalism).

The Communications and Outreach section must include a strategic plan for communicating about the Center and its results to DHS, other key stakeholders, and the general public, including how the Center will:

- Engage with key stakeholders,
- Market its research and education activities, capabilities and outputs to stakeholders and the public, and
- Recruit students to its program.

c. Transition (8 pages)

As a mission agency, DHS funds projects with the ultimate goal of making homeland security practitioners more effective and efficient. Therefore, COEs are expected to have concrete objectives for how their research efforts will improve processes (e.g., operations, policies, decision-making), as well as impact homeland security (e.g., protect lives, property, and economies).

Transferring and transitioning research into the market requires a systematic understanding of customer needs, process and product design, and product and

service development. The success of COEs depends on the ability to identify the needs of customers and quickly develop feasible and scalable products and solutions that meet those needs in operational settings. Delivering value to the customer is not simply a scientific problem, a design problem, or a market problem; it involves specific attention to each of the three general areas noted above.

The transfer or transition of COE results are two pathways that get COE results into use by customers or end-users. For example, a COE may develop a proof-of-concept or prototype tool that once validated may be transferred to industry or other partners to bring to market.

COEs also transfer tangible, implementable outputs such as knowledge products and tools. They publish peer-reviewed journal articles to contribute to the broader scientific research body of knowledge, and translate that new knowledge into reports, presentations, webinars, or training for decision-makers and operational personnel.

Finally, COEs develop talent, facilitating university faculty, students, and graduates' fellowships, internships, or entry into the workforce.

In order to assist in the evaluation of the performance of the Center and its projects, DHS OUP uses a form of the stage-gate methodology. This stage-gate methodology is a well-established project management approach used within government and industry. The stage-gate process provides a conceptual roadmap that divides project efforts into distinct stages separated by management decision gates.[37] It allows for reviewers to conduct evidence-based decision making that mitigates programmatic risk and enables program managers to monitor progress and make decisions. At each stage, the Center and program managers evaluate the project status and ensure specific criteria such as: strategic fit, technical feasibility, customer acceptance, market opportunity, and financial opportunity are met before proceeding to the next stage of investment. Figure 2 below is a depiction of a generic form of the stage-gate process.

[37] Defense Acquisition University (DAU) Stage-Gate Process: https://www.dau.edu/tools/tpmm/Pages/solutions/Stage-GateProcess.aspx

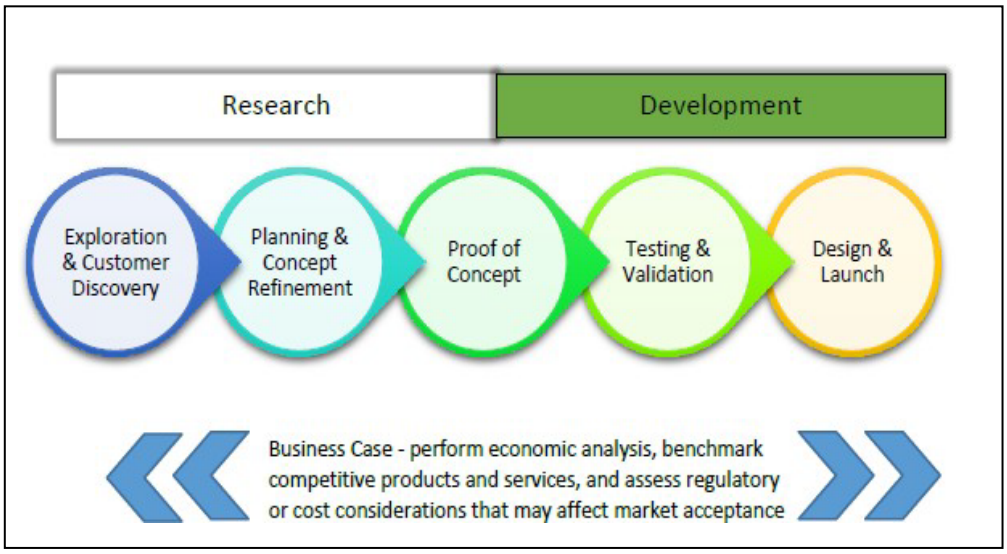

Figure 2: Stage-Gate Process

The Center's strategic approach to transition must be based upon this stage-gate methodology shown in Figure 2, and as described in further detail below. The applicant must use this framework to describe the planning and execution of studies and developmental steps and the corresponding market and business steps necessary to complete the effort and transfer program outcomes into use. As a result of using this framework, the Applicant should be able to characterize the proposed research as a function of its technical maturity and market readiness at any given time.

Applicants are required to submit a detailed strategy and framework that the Center will adhere to when developing annual work plans under Section A, item #3 of the Administrative Terms and Conditions (Appendix A) and executing the portfolio of projects. Each project team must utilize this framework in the management of the project.

Not all projects will result in outputs for a commercial market; however, at a minimum, all teams should describe how customers can access the program outputs, how the team will protect intellectual property, and what laws and regulations could impact the use of the program outputs.

Example stages of research are:

a) *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.

b) *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.

Example stages of development are:

a) *Proof of Concept*: the stage of development where key technical challenges are 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.
b) *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.
c) *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.

The DHS COEs must form teams of qualified professionals with the complementary skills necessary to transition research results from the research laboratory into the hands of homeland security customers. This includes understanding customer relations, conducting market assessments, managing intellectual property rights, considering commercialization, and assessing life cycle costs and needs (operations and maintenance and training).

Lead institutions are encouraged to develop proposals that include administrative support for facilitating transition, such as a staff member dedicated to assisting project leads with developing transition plans and the partnerships needed for successful transition, including with customers or the private sector. COEs are encouraged to leverage capabilities and resources offered through their university technology transfer offices in order to protect intellectual property by filing invention disclosures, patents, and licensing agreements. In addition, COEs are expected to participate in workshops, technology demonstrations, conferences, and other events hosted by OUP that may facilitate research and technology transition to customers.

DHS COEs also should have specific objectives for transitioning their

education efforts, which should include but are not limited to (1) capacity-building in disciplines relevant to homeland security, including at MSIs, (2) development and training of homeland security professionals for the current and future workforce through executive education programs, and (3) engagement of COE-supported students in research projects in applied or operational settings.

Historically, COEs that have effectively engaged stakeholders early in their activities have had great success. Examples of such engagement include:

- Inviting customers, such as DHS Component representatives or first responders, to work with principal investigators as they develop and implement their research and transition plans
- Conducting projects in coordination with DHS S&T technical divisions
- Inviting customers/stakeholders to participate in program/project reviews
- Holding workshops that bring researchers and homeland security practitioners together
- Partnering with private industry or business to co-develop technologies
- Embedding researchers or students in an operational environment
- Hosting an operational expert to participate in COE activities

The Transition section must include the following elements:

- The Center's overarching strategic approach for transferring and or transitioning its research and education results to customer organizations. The strategy must reflect the stage-gate methodology described in this section above.
- How will the Center perform market assessments, integrate results from multiple projects, and formulate strategies to offer those outputs to customer groups? For example, will individual project investigators be responsible for these functions, or will the Center core staff fill this role?
- Provide a description of the Center's (various) transition framework(s) appropriate for the types of scientific domains proposed.
- What is the Center's process for identifying intellectual property, and filing invention disclosures, patents, or developing license agreements? Who is responsible for these functions?
- As projects end, how will the Center choose projects in the different domains listed in this announcement?
- How will the Center evaluate and document the technical maturity of each proposed approach?
- How will the Center identify the appropriate gates and metrics that each project will be evaluated against to ensure sufficient evidence exists to warrant further investment?
- How will the Center characterize the proposed research as a function of

its technical maturity within the market/domain (incremental or disruptive approach)?
- How will the Center engage customer groups and commercialization partners at each step of the transition process?
- How will the Center leverage or take advantage of the resources available within the lead institution's university technology transfer offices?

d. Program and Project Evaluation (: 3 pages)

Annual COE funding is contingent on performance and the availability of federal funds. Center leads are responsible for ensuring the overall success of the Center and its projects. The best proposals will offer insightful and creative approaches for: (1) demonstrating the success of the Center in ways that illustrate the real-life impacts and societal benefits of the Center's research and education work, and (2) using assessment outcomes to guide Center management and administration as well as its investments. Applicants are encouraged to refer to Memorandum 20-12 detailing federal standards and practices related to evaluations and evaluation activities. (https://www.whitehouse.gov/wp-content/uploads/2020/03/M-20-12.pdf)

Center leadership should effectively monitor progress by continually evaluating and selecting the most promising homeland security-related research and ensuring the appropriate allocation and prioritization of resources. This should occur through the insights gained from the Center's stage-gate methodology. DHS expects COEs to continually seek out the best researchers within their subject areas. Managing a COE as an evolving portfolio of projects gives DHS and the COEs the flexibility to fail fast and adjust to fund new efforts with higher marginal benefit for homeland security. DHS will require that research projects that have shown little progress or have little implementation potential be discontinued and that new projects with greater potential be initiated through a competitive process. The addition, termination, or major modification of projects will be reviewed and approved by DHS S&T program staff.

Several COEs have established advisory boards with partners in the private and public sectors as well as academia to guide program and/or project direction. This includes providing subject matter expertise, understanding of operational environments, potential transition pathways, and customer perspectives. Note: DHS OUP will establish its own advisory panel of federal customers and SMEs, who will be available to consult with the COE leadership, as needed.

In addition, DHS will conduct formal biennial reviews. COE Biennial Reviews are rigorous subject matter reviews that evaluate whether projects demonstrate scientific quality, progress according to the work plans, and relevance of project outcomes to homeland security mission areas. The

reviews will be conducted in coordination with the Center's leadership team. DHS will use the outcomes of the biennial reviews to guide future decisions about investment in the Center and its projects. Following these reviews, some projects or entire topics may be discontinued and replaced. In such cases, funding will be reallocated to new, high-priority issues and/or promising initiatives within the Center.

The Program and Project Evaluation section must include the following elements:

- Program Evaluation
  - How the Center will assess whether it is achieving its short- and long-term goals;
  - How Center leadership will use its self-assessment outcomes to guide Center management and administration, as well as its investments;
  - What metrics will be used to evaluate core leadership, management, and administrative functions (e.g., leadership, transition, communications, financial management);
  - How the Center will utilize review committees and/or advisory boards as a part of evaluation processes;
  - Process and evaluation criteria to hold competitions for and select new projects; and
  - How the Center will assess the extent to which the team is familiar with the technical approach that is proposed and the extent to which the team is familiar with the gap or need identified.
- Project Evaluation - For each project, Applicants should identify the current status of the corresponding field of research being proposed and describe how their approaches and technologies would improve upon the science and also translate to operational advances.
  - How the Center will conduct annual project reviews with stakeholders;
  - How the Center plans to demonstrate and evaluate business/ programmatic progress pertaining to projects using stage-gate methodologies;
  - How the Center will use laboratory based, field based, and customer-based testing;
  - How the Center will identify evaluation metrics for project success and mechanisms for tracking those metrics, including outcome measures that demonstrate public benefit such as dollars saved, or operations improved (return on investment); and
  - How the Center will identify output measures for education projects.

V. Past Performance (6 pages)

Only applicants who have previously led a DHS S&T COE must submit a summary of their past performance as a DHS COE. Applicants must describe:

a. Whether and/or how the Center was able to successfully complete and manage stakeholder agreements;
b. Successful research projects and results, especially transition results that had significant positive impacts to DHS, including discussion of

experience with the technology transition process;

c. The number of patents, copyrights, licenses, and trademarks filed from the previous DHS COE award;
d. The timeliness in which the Center's Lead Institution evaluated and submitted intellectual property documentation to the Patent and Trade Office;
e. Previous engagement with the HSE;
f. Successful education efforts, including new courses and professional training developed, internships, and students who entered homeland security STEM disciplines or careers;
g. Collaborations that occurred among Center partners and other research centers;
h. The Center's collaboration with customers, including federal agencies;
i. The diversity of performers integrated in the Center (e.g., academia, industry, national lab, non-profit, state, and federal agencies);
j. Information about numbers of publications, licenses, patents, and additional funds secured;
k. How the Center was managed, including program milestones and metrics established; and
l. The process for competing new research projects;
m. Lessons learned from the first grant period.

In evaluating applicants under these factors, DHS will consider the information provided by the applicant and may also consider relevant information from other sources, including information from DHS files and from current/prior grantors (e.g., to verify and/or supplement the information provided by the applicant).

10. **Performance Measures**

The specific goal of the **Center for Homeland Security in the Arctic** is to conduct research and education to enable a secure and resilient Arctic region.

The objective of the **Center for Homeland Security in the Arctic** is to develop capabilities and knowledge to advance homeland security in the Arctic across four related research and education themes: (1) Advance All-Domain Situational Awareness, (2) Improve Understanding of Risks and Potential Impacts, (3) Enable Adaptation for Resilience, and (4) Expand Collaboration and Cooperation across the HSE.

DHS will monitor COE progress toward achieving the program goals and objectives for this Center through semi-annual and annual performance reports as outlined in the Terms and Conditions. See Appendix A: Terms and Conditions for additional details. Reports are emailed to the DHS Grants Office and reviewed as a condition for receiving further annual funding increments.

In addition to these performance reports, on an annual basis, COEs will provide DHS S&T the following information regarding COE activities:

- Amount of software developed (e.g., algorithms, prototypes, models, etc.)

- Number of publications produced (e.g., peer reviewed, non-peer reviewed, presentations, congressional testimony)
- Number of education programs developed (e.g., courses, degrees, certificates, internship programs)
- Number of students enrolled or participating in COE developed education programs (e.g., full/part-time, online/distance learning, DHS professionals, internship enrollees)
- Amount of intellectual property developed (e.g., patents issued, copyrights registered, trademarks registered
- Number of requests for assistance or advice from DHS
- Number of requests for assistance or advice from other federal (non-DHS), SLTT entities
- Amount of follow-on funding from other resources (e.g., amount and sources of funding)

The DHS Program Office will also collect information on the Key Performance Indicator (KPI) for this COE via Annual Workplans and track the progress of the KPI on a quarterly basis as project updates are received. The KPI for this COE will be :

- Number of diverse research partnerships formed annually by the Center for Homeland Security in the Arctic (i.e., an academic institution other than the lead university, a private industry partner, or another relevant organization across the Homeland Security Enterprise represents one partnership).

This measure demonstrates the number of diverse partnerships. Diverse partnerships ensure that innovative concepts are being continually sought as the Center for Homeland Security in the Arctic works to develop and transition solutions to the homeland security enterprise. The number of diverse research partnerships (e.g., representing a variety of disciplines, academic collaborations, and governmental and sectoral collaborations) that a lead university is able to maintain demonstrates a key factor in the successful operation of a COE. Diverse partnership teams strengthen the COE's research with collaborative and responsive subject matter experts, expand workforce development opportunities, and increase the likelihood of research and educational outputs that may be transitioned; thus, broadening the awareness and outreach of the COE and its capabilities.

This information will allow DHS to track the efficiency and effectiveness of COE programs.

B. Federal Award Information

1. **Available Funding for the NOFO: up to $4,600,000 in the first award year**

   After the first award year, an additional $4,600,000 per year for the following nine years is anticipated (DHS awards Center funding annually, contingent upon appropriations. Award amounts are subject to the availability of funding).

2. **Projected number of Awards:**
   1

3. **Period of Performance:**
   Up to 120 months (10 years)

   DHS anticipates the period of performance of the Center to be up to 120 months, encompassing 10 program years. DHS anticipates each program year will be 12 months, subject to the availability of funds. COE annual program years coincide with most academic calendars, i.e., July 1st to June 30th of the following year. The first program year may be more or less than one year to allow a new COE's period of performance to be synchronized with this calendar.

   However, because the actual award date is not known in advance, applicants must submit a proposal for the full first year. Each year, annual funding is subject to the availability of appropriated funds, the performance of the Center, and DHS research priorities.

   An extension to the period of performance may be permitted. Please refer to Extensions, in Section H, for the steps recipients must follow and what information must be included in the justification for such request to be considered.

4. **Projected Period of Performance Start Date(s):**
   10/30/2023
5. **Projected Period of Performance End Date(s):**
   10/30/2034
6. **Funding Instrument Type: Cooperative Agreement**
   Cooperative Agreement – A cooperative agreement is a legal financial assistance instrument between DHS and a non-federal entity that consistent with 31 U.S.C. §6305, used to enter into a relationship the principal purpose of which is to transfer anything of value from the federal awarding agency or pass-through entity to the non-federal entity to carry out a public purpose authorized by a law of the United States (31 U.S.C. § 6101(3)); and not to acquire property or services for the Federal Government's direct benefit or use. A cooperative agreement is distinguished from a grant in that it provides for substantial programmatic involvement between the federal awarding agency and the non-federal entity in carrying out the activity contemplated by the federal award.

   The DHS Program Office will exercise substantial programmatic involvement through this cooperative agreement.

   Per Appendix A: Terms and Conditions for additional details of substantial programmatic involvement, in addition to the usual monitoring and technical assistance, the following identifies DHS responsibilities under this Award:

   I. DHS shall determine if a kickoff meeting is required for proposed projects or proposed continuations of existing projects. DHS shall coordinate with appropriate DHS staff, Center staff and Center researchers prior to project initiation.

II. DHS shall approve or disapprove annual work plans and any modifications to the work plans for this Award (See Article 1. A.).

III. DHS shall conduct ongoing monitoring of the activities of Recipient's workplan and activities funded through this Award through face-to-face and/or telephone meetings and review of progress reports.

IV. DHS shall coordinate biennial reviews in cooperation with the Recipient during the Project Period to provide guidance on how the research and education programs need to evolve to align with the needs of the Homeland Security Enterprise consistent with the COE mission. The biennial review evaluates the Center's long-term strategy, relevance of the research and education to DHS mission needs and technology gaps, stakeholder engagement, research quality, outreach efforts and management of the activities funded under this Award. The DHS Program Officer will select a review panel of subject matter experts representing government, industry and academia for the biennial review.

V. DHS coordination with the Recipient will include, but is not limited to:

   a. Providing strategic input as necessary on an ongoing basis;
   b. Coordinating research and development activities that support the national research agenda; and
   c. Creating awareness and visibility for this program.

VI. DHS may modify this Award to support additional research projects funded by DHS or other sources provided that these projects meet three conditions:

   a. Are research for a public purpose that addresses homeland security research priorities;
   b. Fall within scope of the cooperative agreement; and
   c. Conform to federal assistance agreements (grant and cooperative agreement) guidelines.

VII. DHS employees may co-author publications with COE researchers. Any publication co- authored by DHS staff will be subject to DHS's publications approval process prior to dissemination of the publication as required under Item 9, in Section A, .

VIII. DHS shall review and provide comments on the Recipient's Information Protection Plan as required under Item 11 in Section A.

IX. DHS shall review and provide comments on the Recipient's Research Safety Plan as required under Item 14, in Section A.

X. DHS may create a Board of Directors that provides guidance on research relevance to the DHS Program Officer regarding the Recipient's research plan.

XI. DHS may invite subject matter experts, customers, or stakeholders to assist in evaluating the Center's annual workplan, annual meetings, or other events for the purpose of reviewing project quality and/or providing relevant operational perspectives.

XII. DHS shall facilitate initial engagement with Homeland Security Enterprise stakeholders, but recipient is expected to maintain ongoing engagement for research areas of interest to the stakeholders.

XIII. DHS shall ensure adherence to DHS privacy policies and requirements

and include that recipients perform work in a manner consistent with DHS authorities.

There is one funding opportunity associated with this COE award: (1) one for Center Lead (DHS-22-ST-061-ARCTIC). Subject to availability of funds, DHS estimates that a total of up to $4.6 million per year for 10 years will be available for funding the Center's direct and indirect costs per 2 CFR 200.414 for the selected Center Lead. DHS does not guarantee any total amount of annual or cumulative funding.

DHS reserves the right to select or not select research and/or workforce development projects submitted in response to this NOFO to create the research and education portfolio for the new Center. DHS awards the cooperative agreement to the Center Lead. Projects selected by DHS become part of the Center portfolio and are funded through the cooperative agreement with the Center Lead institution. The Center Lead is responsible for administering funding to all DHS-selected projects within the Center's portfolio.

Note: The first year of funding may be less due to startup delays; however, applicants should submit proposals for the full amount.

C. Eligibility Information

1. **Eligible Applicants**

The Center Lead designation is restricted to an accredited institution of higher education in the United States, in accordance with 6 U.S.C. 188(b)(2)(A) which specifies: "The Secretary, acting through the Under Secretary for Science and Technology, shall designate a university-based center or several university-based centers for homeland security."

DHS will accept only one (1) application for Center Lead from any single university for review. Proposals must be submitted by an accredited U.S. institution of higher education that, along with its chosen partners, has the ability and capacity to conduct the required research. The applicant institution must be identified as the official lead for proposal submission and subsequent negotiations.

Center Lead applicants are strongly encouraged to partner with industry, other academic institutions, including historically black colleges and universities (HBCUs), Hispanic serving institutions (HSIs), and/or other MSIs; institutions in states that are part of the Experimental Program to Stimulate Competitive Research (EPSCoR); public sector institutions, and non-profit organizations, including any organizations that meet the definition of nonprofit in OMB Circular A-122, relocated to 2 CFR Part 230. However, nonprofit 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. The Center Lead institution will fund partnering institutions through sub-awards.

Center Lead institution partnerships with foreign institutions are permitted but may require special justification and approval from DHS. The applicant can include team members who are non-U.S. citizens; however, the proposed Center Director must be a U.S. citizen eligible for a security clearance.

FFRDCs or laboratories funded by federal agencies may not apply. FFRDC employees may cooperate or collaborate with eligible applicants within the limits imposed by applicable legislation, regulations, and DHS policies. FFRDC employees are not eligible to serve in a principal leadership role on a grant or cooperative agreement and may not receive salaries or in other ways augment their agency's appropriations through awards made by this program. National laboratory employees may participate in planning, conducting, and analyzing the research directed by the COE principal investigator, but may not direct projects on behalf of the applicant organization or principal investigator. The principal investigator's institution, organization, or governance may provide funds through its assistance agreement with DHS to an FFRDC for project-specific, non-federal research personnel, supplies, equipment, facilities, data, and other expenses directly related to the research.

Federal agencies may not apply. Federal employees are not eligible to serve in a principal leadership role on a grant or cooperative agreement and may not receive salaries or in other ways augment their agency's appropriations through awards made by this program. Nonetheless, federal employees may interact substantively with awardees in the form of cooperation. Cooperation involves consulting on the planning, management, and coordination of COE activities, sharing or comparing samples, equipment, facilities, data, models, or other support during the conduct of the research in which the interaction is substantial and requires the award of a cooperative agreement, rather than a grant. Substantial involvement occurs when the collaboration or cooperation of a federal employee or facility is necessary to achieving the overall goals of the research supported by a cooperative agreement.

2. **Applicant Eligibility Criteria**
DHS will not consider applications that do not adhere to one or more of the following requirements:

- Deadlines. DHS will not accept late applications. Without exception, applications must be received by Grants.gov on or before the deadline indicated in this announcement or they will not be considered.
- Application relevance. Applications that do not address the purpose of this announcement will not be considered.
- Compliance and completeness. Applications must substantially comply with the application submission instructions and requirements in this announcement, or they will not be considered.
- Funding limits. Applications exceeding the funding limits will not be considered.
- Project period. Applications exceeding the project period term will not be considered.

3. **Cost Share or Match**

   A cost match or a cost share is voluntary. However, the ability to extend the reach of DHS funds for research and education in support of its mission is an important consideration for DHS. In-kind contributions demonstrate a university's commitment to the COE, and will be considered during the Site Visit Review as an "other factor" as described in Section E.2.I.

4. **Key Dates and Times**

   a. Application Start Date: *04/19/2023*

   b. Application Submission Deadline: *06/19/2023 at 11:59:59 PM EDT*
   - All applications must be received by the established deadline.

   c. Anticipated Funding Selection Date: *10/30/2023*

   d. Anticipated Award Date: *10/30/2023*

   e. Other Key Dates *(If applicable)*

Event	Suggested Deadline for Completion
Initial Registration at SAM.gov (includes UEI issuance)	Four weeks before actual submission deadline 05/19/2023
Obtaining a valid EIN	Four weeks before actual submission deadline 05/19/2023
Updating SAM registration	Four weeks before actual submission deadline 05/19/2023
Starting application in Grants.gov	Two weeks before actual submission deadline 06/05/2023
Informational Webinar	05/09/2023 (4:00PM EDT) See details below

1. **Informational Webinar**

   DHS will conduct an informational webinar for interested applicants on May 9, 2023, at 4:00pm. During the call, DHS will discuss the NOFO and provide an opportunity for interested applicants to ask questions. **The webinar may be accessed by computer at this link:** DHS Center of Excellence NOFO Webinar Link

   To call in (audio only), dial +1 202-516-6093,,968247472# Phone Conference ID: 968 247 472#

5. **Agreeing to Terms and Conditions of the Award**

   By submitting an application, applicants recognize that they will be subject to the requirements of this NOFO, the DHS Standard Terms and Conditions, and the terms and conditions specific to this award (Appendix A), should they receive an award.

6. **Address to Request Application Package**

   Application forms and instructions are available at Grants.gov. To access these materials, go to https://www.grants.gov/, select "Applicants" then "Apply for Grants," read the registration requirements and register if necessary (**Allow up to 7-10 business days after you submit**

before your registration is active in SAM, then an additional 24 hours for Grants.gov to recognize your information). In order to obtain the application package, select "Download a Grant Application Package." Enter the Catalog of Federal Domestic Assistance (CFDA) Package," and then follow the prompts to download the application package.

For a hardcopy of the full NOFO, please email request to:

Stephanie Dawkins
stephanie.dawkins@hq.dhs.gov

Applications will be processed through the Grants.gov portal

7. **Unique entity identifier and System for Award Management (SAM)**
   Each applicant, unless they have a valid exception under 2 CFR 25.110, must:
   1) Be registered in Sam.Gov before application submission.
   2) Provide a valid unique entity identifier in its application.
   3) Continue to always maintain an active SAM registration with current information during the Federal Award process.

8. **Steps Required to Submit an Application, Unique Entity Identifier, and System for Award Management (SAM)**
   To apply for an award under this program, all applicants must:

   a. Have an account with https://login.gov/
   b. Register for, update, or verify their SAM account and ensure the account is active and Employer ID Number (EIN) before submitting the application.
   c. Create a Grants.gov account**.**
   d. Add a profile to a Grants.gov account.
   e. Establish an Authorized Organizational Representative (AOR) in Grants.gov.
   f. Submit (if applicable, add: an initial) application in Grants.gov.
   g. (If applicable) Submit the final application in the <insert applicable system>.
   h. Continue to maintain an active SAM registration with current information, including information on a recipient's immediate and highest-level owner and subsidiaries, as well on all predecessors that have been awarded a federal contract or grant within the last 3 years, if applicable, at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency.

   Applicants are advised that DHS may not make a federal award until the applicant has complied with all applicable SAM requirements. Therefore, an applicant's SAM registration must be active not only at the time of application, but also during the application review period and when DHS is ready to make a federal award. Further, as noted above, an applicant's or recipient's SAM registration must remain active for the duration of an active federal award. If an applicant's SAM registration is expired at the time of application, expires during application review, or expires any other time before award, DHS may determine that the applicant is not qualified to receive a federal award and use that determination as a basis for making a federal award to another applicant.

The Standard Language for Using Grants.gov to Apply is provided to aid in fulfilling these requirements (if applicable), based off of https://www.grants.gov/web/grants/grantors/grantor-standard-language.html.

9. **Electronic Delivery**
   DHS is participating in the Grants.gov initiative to provide the grant community with a single site to find and apply for grant funding opportunities. therefore, applicants with electronic access are to submit their applications electronically through http://www.grants.gov/web/grants/applicants/apply-for-grants.html. Before you can apply for a DHS grant at grants.gov, you must have a Unique Entity Identifier (UEI), be registered in SAM, and be approved as an Authorized Organizational Representative (AOR).

10. **How to Register to Apply Through Grants.gov**
    a. Instructions: Registering in Grants.gov is a multi-step process. Read the instructions below about registering to apply for DHS funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

       The registration process can take up to four weeks to complete. Therefore, registration should be done in sufficient time to ensure it does not impact your ability to meet required application submission deadlines.

       Organizations must have a Unique Entity Identifier (UEI) Number with an active System for Award Management (SAM) registration, and Grants.gov account to apply for grants. If individual applicants are eligible to apply for this grant funding opportunity, then you may begin with step 3, Create a Grants.gov account, listed below.

       Creating a Grants.gov account can be completed online in minutes, but SAM registration may take several weeks. Therefore, an organization's registration should be done in sufficient time to ensure it does not impact the entity's ability to meet required application submission deadlines. Complete organization instructions can be found on Grants.gov here:
       https://www.grants.gov/web/grants/applicants/organization-registration.html.

       1) Register with SAM: All organizations applying online through Grants.gov must register with the System for Award Management (SAM). Failure to register with SAM will prevent your organization from applying through Grants.gov. SAM registration must be renewed annually. Organizations will be issued a UEI number with the completed SAM registration.

          For more detailed instructions for registering with SAM, refer to:
          https://www.grants.gov/web/grants/applicants/organization-registration/step-2-register-with-sam.html.

2) Create a Grants.gov Account: The next step is to register an account with Grants.gov. Follow the on-screen instructions or refer to the detailed instructions here: https://www.grants.gov/web/grants/applicants/registration.html.

3) Add a Profile to a Grants.gov Account: A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the UEI Number for the organization in the UEI field while adding a profile.

   For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.grants.gov/web/grants/applicants/registration/add-profile.html.

4) EBiz POC Authorized Profile Roles: After you register with Grants.gov and create an Organization Applicant Profile, the organization applicant's request for Grants.gov roles and access is sent to the EBiz POC. The EBiz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the AOR role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been assigned the AOR role.

   For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html.

5) Track Role Status: To track your role request, refer to: https://www.grants.gov/web/grants/applicants/registration/track-role-status.html.

6) Electronic Signature: When applications are submitted through Grants.gov, the name of the organization applicant with the AOR role that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC **must** authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role; **this step is often missed, and it is crucial for valid and timely submissions.**

11. **How to Submit an Application to DHS via Grants.gov**

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each NOFO, you can create individual instances of a workspace.

Below is an overview of applying on Grants.gov. For access to complete instructions on how to apply for opportunities using Workspace, refer to: https://www.grants.gov/web/grants/applicants/workspace-overview.html.

a. *Create a Workspace*: Creating a workspace allows you to complete it online and route it through your organization for review before submitting.

b. *Complete a Workspace*: Add participants to the workspace to work on the application together, complete all the required forms online or by downloading PDF versions, and check for errors before submission. The Workspace progress bar will display the state of your application process as you apply. As you apply using Workspace, you may click the blue question mark icon near the upper-right corner of each page to access context-sensitive help.

c. *Adobe Reader*: If you decide not to apply by filling out webforms you can download individual PDF forms in Workspace. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed through Adobe Reader.

   NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at: https://www.grants.gov/web/grants/applicants/adobe-software-compatibility.html.

d. *Mandatory Fields in Forms*: In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.

e. *Complete SF-424 Fields First*: The forms are designed to fill in common required fields across other forms, such as the applicant's name, address, and UEI number. To trigger this feature, an applicant must complete the SF-424 information first. Once it is completed, the information will transfer to the other forms.

f. *Submit a Workspace*: An application may be submitted through workspace by clicking the Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package at least 24-48 hours prior to the close date to provide you with time to correct any potential technical issues that may disrupt the application submission.

g. *Track a Workspace Submission*: After successfully submitting a workspace application, a Grants.gov Tracking Number (GRANTXXXXXXXX) is automatically assigned to the application. The number will be listed on the Confirmation page that is generated after submission. Using the tracking number, access the Track My Application page under the Applicants tab or the Details tab in the submitted workspace.

   For additional training resources, including video tutorials, refer to: https://www.grants.gov/web/grants/applicants/applicant-training.html.

   Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800-518-4726 and email at support@grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant to which you are applying.

If you are experiencing difficulties with your submission, it is best to call the Grants.gov Support Center and get a ticket number. The Support Center ticket number will assist DHS with tracking your issue and understanding background information on the issue.

12. **Timely Receipt Requirements and Proof of Timely Submission**

a. *Online Submission*. All applications must be received by 11:59PM Eastern time on the due date established for each program. Proof of timely submission is automatically recorded by Grants.gov. An electronic date/time stamp is generated within the system when the application is successfully received by Grants.gov. The applicant with the AOR role who submitted the application will receive an acknowledgement of receipt and a tracking number (GRANTXXXXXXXX) from Grants.gov with the successful transmission of their application. This applicant with the AOR role will also receive the official date/time stamp and Grants.gov Tracking number in an email serving as proof of their timely submission.

When DHS successfully retrieves the application from Grants.gov, and acknowledges the download of submissions, Grants.gov will provide an electronic acknowledgment of receipt of the application to the email address of the applicant with the AOR role who submitted the application. Again, proof of timely submission shall be the official date and time that Grants.gov receives your application. Applications received by Grants.gov after the established due date for the program will be considered late and will not be considered for funding by DHS.

Applicants using slow internet, such as dial-up connections, should be aware that transmission can take some time before Grants.gov receives your application. Again, Grants.gov will provide either an error or a successfully received transmission in the form of an email sent to the applicant with the AOR role attempting to submit the application. The Grants.gov Support Center reports that some applicants end the transmission because they think that nothing is occurring during the transmission process. Please be patient and give the system time to process the application.

13. **Content and Form of Application Submission**

a. SF424 (R & R) Application for Federal Assistance (SF424-V2.0)

Please complete this form in its entirety. If you fill this form out first, other required forms will populate with basic data such as name, address, etc. Signature and date will auto-fill when you submit the application package through Grants.gov.

I. Block 1, Type of Submission – please check "Application"

II. Block 8, Type of Application – please check "New"

III. Block 12, Proposed Project – please provide the start and end dates for your project

IV. Block 15, Total Estimated Project Funding – this amount should correspond to your budget justification and the Budget form's total for the requested budget period. ***DHS anticipates the period of performance of the Center to be up to 120 months, encompassing 10 program years.***

V. Block 16 (E.O. 12372 review question): Please contact your State Single Point of

Contact (SPOC) to determine whether you are required to submit this noncompeting continuation application for review, and then check the appropriate box in Block 19. Find your State SPOCs: https://www.whitehouse.gov/wp-content/uploads/2020/04/SPOC-4-13-20.pdf

VI. Regarding Block 17: By submitting this application, your organization is providing certifications and assurances regarding:

1. Drug-Free Workplace Requirements
2. Debarment, Suspension, and Other Responsibility Matters—Primary Covered Transactions
3. Information regarding the certifications on drug-free workplace; and debarment, suspension, and other responsibility matters; is attached for your reference as Attachment A

VII. If you are requesting Indirect/Fringe Costs, please attach your indirect cost rate agreement, fringe benefit rate agreement, or a description of how fringe rates are calculated, using the "Add Attachments" button at the end of the 424

b. Budget Information, Non-Construction Programs (SF424A-V1.1)
Filling out the Budget Form – please ensure that funds requested on the Budget form correspond to the same items in your budget justification and that the total requested corresponds to Block 15 on the SF 424 form. ***DHS anticipates the period of performance of the Center to be up to 120 months, encompassing 10 program years.***

c. Certification Regarding Lobbying (GG_Lobbying Form-V1.1)
Submit this form. It will be electronically signed upon submission to Grants.gov as part of your application. If paragraph two of the certification applies, then complete and submit the SF-LLL Disclosure of Lobbying, which is provided as an optional form in the application package.

d. Research & Related: Senior/Key Personnel Profile
Applicants must complete a profile for the principal investigator(s) as well as other Senior Key Personnel identified for the project. Provide biographical a sketch for each senior/key person that include education and research activities and accomplishments and each individual's role in the proposed project. Each biographical sketch may not exceed two pages.

e. Research & Related: Other Project Information
Tips: Write for a general audience and avoid use of scientific jargon to the extent possible. Please define any technical terminology that is discipline specific. Be concise and direct in descriptions.

I. Other Project Information (Items 1-6)
Includes information regarding use of human subjects, use of animal subjects, proprietary information, environmental impacts, historic place designation, and international collaborators.

II. Project Summary/Abstract (Item 7)

For the purpose of this NOFO, "Project Summary" is intended to be an overview summary of the Center. The summary is limited to one single-spaced page with 12-point Times New Roman font and one-inch margins. Attach the Summary/Abstract to Item 7 on the Research & Related Other Project Information Form.

The Summary/Abstract is for dissemination to the public and must not include any proprietary or confidential information. Include the title of the Center and provide a summary of (1) the overarching vision, mission, and goals for the Center; (2) the Center's research and education themes and topics; and (3) examples of the Center's potential results and how those results may benefit specific homeland security stakeholders.

III. Project Narrative (Item 8)

For the purpose of this NOFO, "Project Narrative" is intended to be the Center narrative. The Center narrative is limited to 69 single-spaced pages with 12-point font, Times New Roman, and one-inch margins. For applicants who have previously led a DHS S&T COE, the Center narrative is limited to 75 pages to include a summary of their past performance as a DHS COE. Pages in excess of the page limitations will not be reviewed. Attach the Center Narrative to Item 8 on the Research & Related Other Project Information Form.

Suggested page limits for the Center Narrative portion of the application are identified below. Applicants must address the requirements as described in Section A.9.h.

Application Project Narrative

I. Strategic Approach (3 pages)
II. Research Program (35 pages)
III. Education and Workforce Development Program (12 pages)
IV. Management and Administration (19 pages)
    e. Leadership (5 pages)
    f. Communications and Outreach (3 pages)
    g. Transition (8 pages)
    h. Program and Project Evaluation (3 pages)
V. Past Performance (6 pages) (Only applicants who have previously led a DHS S&T COE)

IV. Bibliography & References Cited (Item 9)

The bibliography and/or references section is limited to 5 single-spaced pages with 12-point font, Times New Roman, and one-inch margins.

V. Facilities and Equipment (Items 10 and 11)

Each applicant must provide a very specific description of any equipment/hardware that it needs to acquire to perform the work. This description should indicate whether or not each particular piece of equipment/hardware will be included as part of a deliverable item under the resulting award. Also, this description should identify the component, nomenclature, and configuration of the equipment/hardware that it proposes to purchase for this effort. The purchase on a direct reimbursement basis of special test equipment or other equipment will be evaluated for allow ability on a case-by-case basis. Maximum use of Government integration, test, and experiment facilities is encouraged. Government research facilities and operational military units are

available and should be considered as potential government furnished equipment/facilities. These facilities and resources are of high value, and some are in constant demand by multiple programs.

VI. Other Attachments (Item 12)

Use this to attach the documents listed under **Other Submission Requirements** (i.e., Consolidated List of Partners and Principal Investigator(s), Consolidated List of Projects, Letter of Support from University Leadership) or if you need another place to electronically attach portions of your application.

14. **Optional Forms**

SF-LLL Disclosure of Lobbying Activities
Fill out and submit this form ONLY if Condition 2 in the Lobbying Certification applies.

15. **Other Submission Requirements**

a. Consolidated List of Partners and Principal Investigator(s)
Applicants must provide a consolidated list of all Partners and principal investigator(s) to facilitate identification of reviewers that are free of any organizational or personal conflicts of interest.

b. Consolidated List of Projects
Applicants must provide a consolidated list of all projects proposed under the "Research and Workforce and Professional Development Program" portion of the Center narrative. Project list must include total project funding for each project for the first two years.

c. Letter(s) of Support from Lead University leadership
Applicants must provide a Letter of Support from their university leadership to demonstrate a long-term university resource and administrative commitment to support the COE.

16. **Funding Restrictions and Allowable Costs**

DHS does not envision any specific funding restrictions at this time. However, DHS substantial programmatic involvement and performance/progress reviews may result in funding restrictions in conjunction with initial and annual continuation awards. Funding restrictions may be issued on activities that require further detail or when corrective actions are needed.

DHS OUP awards Center funding annually, contingent upon appropriations. Award amounts are subject to the availability of funding.

17. **Allowable Costs**

a. Indirect Facilities and Administrative (F&A) Costs

Indirect (Facilities & Administrative (F&A)) Costs - Indirect Cost (IDC) is allowable by the recipient and sub-recipients. Provide a copy of the negotiated rate approved by the applicant's cognizant agency at the time of application.

D. Application Review Information

1. Application Evaluation Criteria

a. Programmatic Criteria

DHS S&T will use a three-phase[38] review process to select the lead institution(s) for the COE. The review phases are:

- External scientific quality review conducted by a panel of peers external to DHS,
- Internal relevancy review conducted by a panel of DHS SMEs, and
- Site Visits conducted by a team of DHS SMEs (typically consisting of representatives from the DHS offices that participated in the internal review panel, along with other relevant SMEs).

These three evaluation phases are completed in sequence and are scored independently.[39] Applications that do not meet the minimum rating at any point in the process do not move forward to the next phase and are not considered for final selection. Only the applications scoring above the minimum rating will advance to a subsequent phase.

Each review phase is rated based upon unique criteria (e.g., scientific quality, relevance to DHS, management, etc.). A detailed description of each phase and associated criteria is provided below. Should an application reach the final phase (site visit), the applicant's score from the first phase (scientific review) will be carried forward and included as a percentage of the applicant's site visit score.

Note: All proposals will be the intellectual property of the applicants up until a proposal is approved and an award is made. Additionally, the proposal will be incorporated by reference in the award.

I. Scientific Quality Review (External Review)

This is the first phase in the review process. Applications not meeting the minimum threshold will not advance to the next phase. Note: should an application reach the final site visit phase, its score from this first phase will be carried forward and included as 20% of the final score.

[38] For applications where the same department at a lead university has previously led a DHS COE, (i.e., prior COE leads), S&T will also conduct a fourth phase for a "Past Performance Review"

[39] A portion of an applications rating for the "Site Visit" phase will include their score from the "External Review" phase

DHS will conduct a scientific quality review of proposals by an external review panel of SMEs from academia, non-profit research organizations, industry, and/or federal, state, or local agencies. The panelists will have expertise and/or experience in academic disciplines relevant to the applications received.

The external review panel will consider only evaluation criteria and weightings identified in this NOFO that focus on the quality and influence of the researchers and proposed research and education programs, as well as the appropriateness of research costs.

The OUP Program Manager responsible for the COE Competition serves as chairperson for the external review panel. His/her role is to summarize and convey results (including calculating mean and median ratings) to the Selection Manager (SM) for further consideration, and to answer questions posed by review panelists. The chairperson does not rate the applications. However, the chairperson will serve in an advisory capacity to clarify aspects of the COE program and selection process. In addition, the chairperson maintains order, ensures that all panelists have completed and signed non-disclosure and conflict of interest agreements and ensures proper documentation of the review and rating of the applications. Finally, the chairperson ensures that all documentation is collected from the panel members and all proprietary information is destroyed at the conclusion of the review.

A lead reviewer and at least two other SMEs (primary reviewers) review each proposal thoroughly. With the exception of those deemed to have a conflict of interest, all reviewers have access to all proposals, although each reviewer is only assigned a subset of proposals for formal review. Reviewers will rate applications on a set of weighted criteria using numerical ratings of 1 to 5 (poor to excellent).

After all of the external reviewers have submitted their preliminary reviews through the secure web-based peer review database, an in-person or virtual external review panel meeting will take place. At the meeting, panelists discuss proposals in a randomly assigned order. Following the introductory description, the lead reviewer guides the entire panel in a discussion of the proposal using the evaluation criteria. Primary reviewers and other panelists who have read the entire proposal may provide their final rating for each proposal following these discussions. The lead reviewer is responsible for crafting the final summary evaluation of the primary reviewers' comments, as well as other substantive comments from the panel discussion. DHS does not seek reviewer consensus on a summary review, but rather expects a diversity of opinions. Each primary reviewer must sign off on each summary evaluation form to ensure his or her comments adequately reflect their evaluations.

For each proposal, DHS will calculate the mean and median rating for all reviewers. DHS reserves the right to use either the mean or the median rating as the final rating for applications. A minimum threshold level will be established

for referral of applications from the external review phase to the internal review phase. DHS will select the minimum threshold based on the ratings of applications for this funding opportunity. For example, if DHS receives six applications, three of which have a rating of 4.0 or higher in the external review phase, while the other three are less than 3.5, 4.0 will be the minimum threshold for passing applications to the internal review phase. If the rating—mean or median—is above the threshold established for the external review phase, the application will be considered to be of high scientific quality and will be forwarded for the internal review phase. Under no circumstances will an application be considered if both the mean and the median overall ratings are below 3.0 (Good).

This summary review is critical as it forms a substantive basis for pre-award negotiations with the selected institution(s). The chairperson is responsible for conveying the summary reviews of successful proposals; i.e., those with ratings above the threshold, to the SM for consideration by the internal review panel. The chairperson is also responsible for conveying the summary reviews of the unsuccessful proposals; i.e., those with ratings under the threshold, to the DHS Grants Officer for processing declination letters.

II. DHS Relevancy Review (Internal DHS SMEs)

Applications scoring above the minimum threshold from the external scientific review will advance and be evaluated in the second phase, the internal relevancy review. Scores received in the first phase are not considered in the relevancy evaluation. This phase functions as a discreet "down-select" of applications and these scores, unlike the scores from the first phase, are not carried into the final rating.

As soon as feasible after the external review concludes, the OUP Program Manager responsible for the COE Competition convenes an internal review panel of DHS SMEs to review proposals transmitted from the external review phase (those proposals having mean or median ratings at or above the quality threshold). The chairperson of the external review panel will also serve as the chairperson of the internal review panel. His/her role is to summarize and convey results (including calculating mean and median ratings) to the SM for further consideration and to answer substantive questions posed by review panelists. The chairperson does not rate the applications. However, the chairperson will serve in an advisory capacity should questions arise during the review that may require clarification of the COE program or selection process. In addition, the chairperson maintains order, ensures that all panelists have completed and signed non-disclosure and conflict of interest agreements, and ensures proper documentation of the review and rating of the applications. Finally, the chairperson ensures that all documentation is collected from the panel members and destroyed at the conclusion of the review.

The internal review panel will focus on the mission relevance of the proposed

research; the relation of the proposed research to DHS operations and other R&D in this area; and the potential for the research results to transition to the user community.

With the exception of those deemed to have a conflict of interest, all reviewers have access to all proposals, although they may only be assigned a subset of these proposals for formal review. Reviewers will rate applications on a set of weighted criteria using numerical ratings of 1 to 5 (poor to excellent). Prior to the internal review meeting, all reviewers will provide their narrative reviews and ratings for their assigned proposals to the chairperson, or if a secure web- based peer review database is used, then they will enter their ratings directly into the on-line database. Narrative comments must support the numerical ratings.

After all internal reviewers have submitted their preliminary reviews to the chairperson, or through the secure web-based peer review database, an internal review panel will take place virtually. At the internal review panel, panelists discuss proposals using the selected evaluation criteria described below. Primary reviewers and other panelists who have read the entire proposal may provide ratings for each proposal following these discussions.

For each proposal, DHS will calculate the mean and median rating for all reviewers to determine a final rating. DHS reserves the right to use either the mean or the median rating as the final rating for all applications. A minimum threshold level will be established for referral of applications from the internal review phase to the site visit review phase. DHS will select the minimum threshold based on the ratings of applications for this funding opportunity. For example, if six applications are passed from the external review phase, three of which have a rating of 4.0 or higher in the internal review phase, while the other three are less than 3.5, 4.0 will be the minimum threshold for passing applications to the site visit review phase. If the rating—mean or median—is above the threshold established for the internal review phase, the application demonstrates both scientific quality and relevance. These applications will be forwarded to the site visit review phase. Under no circumstances will an application be considered if both the mean and the median overall ratings are below 3.0. Proposals with ratings above the threshold carry the presumption that the applicant institutions have the capabilities required to establish a successful research and education COE in the relevant topic area.

III. Site Visit Review

Applications scoring above the minimum threshold from the internal relevance review will advance and be evaluated in the third phase, the site visit. Note that 80% of an applicant's final score consists of the site visit ratings, and 20% of the applicant's final score consists of the phase one results (scientific review ratings). The site visit review score is the final rating assigned to a proposal and represents the conclusion of the three-phased evaluation process.

The site visit review team is comprised of the SM, the chairperson, and DHS SMEs, which may include a subset of DHS offices represented on the internal review panel, as well as others with specialized knowledge in managing COEs, education programs, or technology transition. The chairperson's role is to convey results (including calculating mean and median ratings) to the SM for further consideration, make arrangements for site visits, request and collect site visit materials, maintain order, document the absence of conflicts of interest, and ensure proper documentation of the review and rating of the applications.

In addition, the chairperson ensures that all documentation is collected from the team members and destroyed at the conclusion of the review. The chairperson may also be designated as a reviewer by the SM for the site visit to ensure the appropriate experience and composition of the review team. The SM will manage the site visit discussions with applicant leadership and staff.

The site visit review team will evaluate proposals transmitted from the internal review phase (those proposals having mean or median ratings above the threshold). Reviewers will determine the extent to which the applicant's proposal and any site visit materials address the criteria identified in the NOFO.

The site visit team will focus on the applicant's capabilities and/or experience in leadership, project management, education and workforce development, transition, university commitment in support of the proposed COE; communication and outreach; other factors; and, by adding in the weighted total score from the external scientific quality review for each remaining proposal, research quality and influence. Reviewers will rate applications on weighted criteria using numerical ratings of 1 to 5 (poor to excellent).

DHS may opt to conduct a site visit virtually should federal and state guidance continue to advise technological alternatives to in-person gatherings in response to the COVID-19 pandemic and the likelihood of travel restrictions imposed of the site visit review team. If this occurs the Chairperson, as directed by the SM, will coordinate with the applicants to arrange for a virtual site visit.

IV. Past Performance Review (if applicable)

If necessary, a past performance review of an applicant will be conducted. For applicants who are subject to past performance review, scores from this phase will be included as an additional criterion to their final score. These ratings will account for 25% of the proposal's final score, while the site visit will account for 75% (of which, scientific quality will account for 20%).

This evaluation is applicable only to applications where the same department at a lead university has previously led a DHS COE, (i.e., prior COE leads). The past performance review team will consist of the same review team members as the site visit review team, to include the SM, the chairperson, and DHS SMEs, as well as others with specialized knowledge in the prior COE's management,

research programs, education programs or technology transition. The chairperson's role is to convey results (including calculating mean and median ratings) to the SM for further consideration, maintain order, document the absence of conflicts of interest, and ensure proper documentation of the review and rating of the applications. In addition, the chairperson ensures that all documentation is collected from the team members and destroyed at the conclusion of the review. The chairperson may also be designated as a reviewer by the SM to ensure the appropriate experience and composition of the review team.

The past performance review team will evaluate past performance of applicants transmitted from the internal review phase (those proposals having mean or median ratings above the threshold). Reviewers will determine the extent to which the applicant's past performance address the criteria identified in the NOFO.

The past performance review team will focus on the applicant's demonstrated experience as a DHS S&T COE in leadership; project management; transition; MSI, education and workforce development; communication and outreach; scientific quality; and other factors. Reviewers will rate applications on weighted criteria using numerical ratings of 1 to 5 (poor to excellent).

b. Financial Integrity Criteria

Prior to making a federal award, the DHS Financial Assistance Office (FAO) is required by The Payment Integrity Act of 2019, 41 U.S.C. §2313 – Database for federal agency contract and grant officers and suspension and debarment officials, and 2 C.F.R. §200.206 to review information available through any OMB-designated repositories of government wide eligibility qualification or financial integrity information. Therefore, application evaluation criteria may include the following risk-based considerations of the applicant:

1) Financial stability.
2) Quality of management systems and ability to meet management standards.
3) History of performance in managing federal award.
4) Reports and findings from audits.
5) Ability to effectively implement statutory, regulatory, or other requirements.

c. Supplemental Financial Integrity Criteria and Review

Prior to making a federal award where the anticipated total federal share will be greater than the simplified acquisition threshold, currently $250,000 (see Section 805 of the National Defense Authorization Act for Fiscal Year 2018, Pub. L. No. 115-91, OMB Memorandum M-18-18 at https://www.whitehouse.gov/wp-content/uploads/2018/06/M-18-18.pdf):

1) The DHS FAO is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM, which is currently the Federal Awardee Performance and Integrity Information System (FAPIIS) and is accessible through the sam.gov website.

2) An applicant, at its option, may review information in FAPIIS and comment on any information about itself that a federal awarding agency previously entered.
3) The DHS FAO will consider any comments by the applicant, in addition to the other information in FAPIIS, in making a judgment about the applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by applicants as described in 2 C.F.R. §200.206.

2. **Review and Selection Process**

The COE Program's authorizing legislation states: *"… the Under Secretary for Science and Technology, shall operate extramural research, development, demonstration, testing and evaluation programs so as to ensure that colleges, universities, private research institutes and companies from as many regions of the United States as practicable participate."* The geographic location of the lead institution and its major partners with respect to each other and the proximity to other COE lead institutions will be a factor in evaluating proposals submitted in response to this NOFO. Close proximity to another COE lead institution may result in a lower rating, except where an existing COE would be replaced by the new COE established through this funding opportunity.

I. Evaluation Criteria

Each panel or team will be comprised of a set of reviewers and will focus on the evaluation criteria as described in this section. For the external and internal reviews, a minimum of three SMEs will review each proposal and provide comments and ratings based on the relevant criteria. Each phase of the review process is scored separately. The weighting of each criterion is identified under each review phase. Reviewers will consider the proposals in terms of strengths and weaknesses for evaluation criterion. DHS will rate each criterion using the following scale: 1=Poor, 2=Fair, 3=Good, 4=Very Good and 5=Excellent.

1 (poor):	A proposal where weaknesses far outweigh strengths.
2 (fair):	A proposal with strengths and weaknesses approximately equal.
3 (good):	A proposal where there are more strengths than weaknesses.
4 (very good):	A proposal with many strengths and few weaknesses.
5 (excellent):	A proposal where strengths far outweigh weaknesses.

For each review phase, the specific evaluation criteria, and its assigned scoring weight, is detailed below.

Phase 1: Scientific Quality Review (External): Reviewers will rate how the proposal addresses the following criteria using numerical ratings of 1 to 5 (poor to excellent) and apply the percentage-weighting factor as indicated for an overall rating. A proposal's final score in this phase will determine eligibility to advance and be considered further; and, will be included as 20% of the ratings in Phase 3 (detailed below).

A. Research Program Originality (25%)

- Is it original i.e., does the proposed effort challenge and seek to shift current research or paradigms by utilizing novel theoretical concepts, approaches, or methodologies?
- Is it innovative i.e., is the proposal a novel refinement, improvement, or new application of theoretical concepts, approaches, or methodologies proposed?
- Does this research have the potential to generate influential peer-reviewed publications in the scientific community or lead to new discoveries or areas of investigation?
- Does the research plan outline appropriate business, legal, and technical considerations necessary to move the proposed research into use by customers?

B. Project Goals and Methodologies (25%)

Reviewers will rate how the proposal themes and example projects address the following criteria.

- Are the research goals clear and based on sound theory?
- Are the proposed goals and methods feasible?
- Are the proposed methods clearly stated and appropriate for testing the hypotheses?
- Are the data generation or collection approaches appropriate for the research methods?
- Is the proposed timeframe to complete the project(s) appropriate?
- Will the research team have access to the necessary data to execute the project?
- Does the proposal identify the specific gaps being addressed and the steps necessary to test the capabilities in an operational environment?
- If software based, does the proposed research adhere to standards, software requirements specifications, design descriptions, verification and validation plans, configuration management, interoperability, and security standards that are required by potential customers?

C. Qualifications of Personnel and Suitability of Facilities (20%)

- Does the research team have the qualifications – credentials, expertise, and experience – to carry out the proposed research?
- Are the facilities suitable for the proposed research? If so, does the applicant demonstrate a commitment from facility owners to allow researchers to use necessary facilities? Are the facilities currently approved for the work being proposed?
- Does the research proposal demonstrate that the researchers possess a sufficient amount of understanding of regulatory requirements, market conditions, and legal constraints necessary to execute the proposed work?

D. Education Program (25%)

- Does the proposal demonstrate a sound education plan and the ability to establish a program of study for the relevant disciplines related to DHS's mission?
- Are the disciplines of potentially supported students relevant to DHS?
- Does the education program describe the development of new courses, certificates, degrees, or other targeted initiatives that involve students?
- Is there a plan to ensure the student population reflects the diversity of the U.S. population?
- Is the mix between undergraduate and graduate studies appropriate?
- Does the proposal demonstrate a long-term plan to build student capacity in homeland security-relevant STEM disciplines?
- Does the research program appropriately incorporate education initiatives?

E. Costs (5%): Are the proposed research and education costs appropriate and reasonable?

Phase 2: DHS Relevancy Review (Internal): Reviewers will rate how the proposal addresses the following criteria. Reviewers will rate applications using numerical ratings of 1 to 5 (poor to excellent) and apply the percentage-weighting factor as indicated for an overall rating. Scores from this phase will solely determine which proposals will advance to Phase 3. Scores from this phase are not carried into any other review phases.

A. Research Program Mission Relevance (30%)

- Do the goals of the proposed research and education relate to DHS's mission?
- Does the applicant discuss where, in what circumstances, and by whom would research results be used? Are these relevant to the DHS mission?
- Are the potential research outcomes and customers of the research well-described? Does the applicant describe the intellectual property protection efforts necessary to protect the work?
- Do the project proposals include efforts to assess the market and evaluate various transition pathways for the technologies being developed?
- Has the applicant demonstrated an understanding of DHS's existing R&D programs, information systems, and databases in relevant areas?
- Does the proposed program address a knowledge gap not addressed by R&D programs sponsored by DHS or others?

B. Communications and Integration with the HSE (15%)

- Does the application demonstrate a viable plan for developing substantial and continuing engagement with the HSE?
- Does the proposal show ability to work with mission agencies?
- Is there a plan to communicate with and integrate customers into research programs?

- Does the proposal show a workable plan to communicate the Center's capabilities and research results to mission agencies?
- Does the proposal outline a plan to integrate with DHS operations for a specified period of time to gain a better understanding of potential issues that could be addressed by this COE?

C. Workforce Development Mission Relevance (15%)

- Will the applicant incorporate relevant case studies or content linked to homeland security-related science and technology issues and challenges into educational curriculum and/or training?
- Does the proposal describe university/industry/government partnerships that could potentially provide internship experiences, employment opportunities, or career mentorships for the Center's students?
- Does the proposal describe initiatives for tracking career development of the Center's students post-graduation?
- Does the applicant have a plan to ensure that students and research faculty have opportunities to work in homeland security settings?
- Does the plan incorporate information on the current workforce needs within the relevant HSE sectors?

D. Capability Gaps (20%)

- Does the research program and its individual elements focus on areas that DHS has identified as capability or knowledge gaps in the NOFO?

E. Transition Strategy (20%)

- Is there an estimated reasonable timeframe for when COE research results would be available in a usable format (such as web-based platforms that are compatible with most servers, applications (available on desktop or mobile app store) assays, etc.)? How will intellectual property be handled for COE outputs? How effective are the proposed approaches to address sustainability and access concerns?
- Does the transition plan describe viable transition pathways for technologies, tools, and knowledge products to customers in the HSE to include: analyses of the competitive landscape, customer price expectations, delivery mechanisms, transition risk, and intellectual property ownership and protection?
- Does the transition plan propose a process to identify and engage customers throughout the entire duration of the project?
- Does the transition plan propose an overarching strategic approach that reflects the stage-gate methodology described in Section IV.c.?
- Does the applicant have a university resource (e.g., technology transition office) to provide business and legal services necessary to make efficient decisions to support technology transfer?

- Has the program developed a compelling strategy for research management oversight to include a phased stage gate process?
- Does the applicant provide key performance parameters and metrics to capture project performance?
- If software based, does the proposed research adhere to standards, software requirements specifications, design descriptions, verification and validation plans, configuration management, interoperability, and security standards that are required by potential customers?

Phase 3: Site Visit Review: The final review, the site visit, is conducted for proposals that have made it through the prior two phases. Reviewers will rate applications using numerical ratings of 1 to 5 (poor to excellent) and apply the percentage-weighting factor as indicated for a final rating.

A. Leadership and Project Management (25%)

- Does the proposal contain a viable plan for leadership and program and project management as described in this NOFO?
- Has the applicant demonstrated its ability to lead multidisciplinary, collaborative team projects that (1) are designed to address complex homeland security issues, and (2) include a variety of partners, e.g., universities, industry, national labs, international partners, and MSIs?
- Has the applicant secured the best expertise from as many regions of the United States as practicable to address DHS research priorities?
- Has the applicant developed or proposed a plan to sponsor open competitions for research projects?
- Does the applicant identify appropriate milestones and metrics for success to monitor and track the progress of research and education activities?

B. Transition (15%)

- Has the applicant proposed a plan to effectively engage with the HSE?
- Does the applicant have a plan to transition research to appropriate stakeholders?
- Has the applicant demonstrated experience with the technology transition process (e.g., conducting market assessments, applying for patents, filing invention disclosures, obtaining licensing agreements) from academia to the HSE?
- Has the applicant demonstrated how their strategic approach to transition reflects the stage-gate methodology described in Section IV.c.?

C. MSI, Education and Workforce Development (10%)

- Has the applicant proposed a plan to integrate homeland security-related content and research activities into education programs?
- Has the applicant proposed a plan to develop courses/workshops/training

sessions that bring together relevant researchers and stakeholders?
- Has the applicant proposed a plan to track career development of the Center's students in the HSE?
- Does the lead institution have strong partnerships with and resource commitments to MSIs? If not, is there a credible plan to establish such partnerships and resource commitments?

D. Resource Commitment (10%)

- Does the applicant demonstrate or propose a substantive commitment to supporting a DHS COE through the following?
    - University-supported faculty
    - University-supported students
    - Capital investments such as lab and office space
    - Incentives (e.g., tenure and promotion procedures) that reward interdisciplinary and use-inspired research
    - Technology transition support (e.g., technology transition office, business school engagement)
    - Marketing support (e.g., public affairs, media affairs, federal affairs offices)

E. Outreach and Communication (10%)

- Does the proposal include a viable communication and outreach strategy that specifies how the Center will communicate with its partners, across the COE network and with external stakeholders such as HSE practitioners and customers?
- Does the applicant have a track record or plan to communicate effectively with existing and new partners, so that they clearly understand how they fit in with the Center and the DHS mission?
- Does the applicant have a plan or track record to effectively communicate results to homeland security stakeholders?
- Does the applicant have experience developing effective communications materials (e.g., websites, fact sheets, newsletters, press releases)?

F. Scientific Quality (20%)

- This rating is carried over from the External Review rating provided by the Phase 1 External Review Panel.

G. Other Factors (10%)

- DHS S&T reserves the right to consider other factors such as geographical distribution of COE lead and partner institutions, in-kind contributions; and strength of commitment to engage in and conduct mission-related research with DHS and others in the HSE.

Phase 4: Past Performance Review (conditional): After the site visit, the Site Visit Review team will also use the following criteria to evaluate a proposal if the applicant was a prior DHS COE lead. Please note that if the university has not previously performed as the lead for a DHS COE, the criteria scores will be neutral, and the overall rating will not be impacted. The past performance review is only for proposals that have made it to the third and final review phase. The site visit review team will examine the past performance section of the project narrative and determine the extent to which the applicant addresses the following criteria. Reviewers will rate applications using numerical ratings of 1 to 5 (poor to excellent) and apply the percentage-weighting factor as indicated for a final rating.

For applicants who are subject this past performance review, scores from this phase will be included as an additional criterion to their final score. These ratings will account for 25% of the proposal's final score, while the site visit will account for 75% (of which, scientific quality will account for 20%).

A. Leadership (35%)

Did the prior COE:

- Demonstrate its ability to lead multidisciplinary, collaborative team projects that (1) addressed complex homeland security issues, and (2) included a variety of partners, e.g., universities, industry, national labs, international partners, and MSIs?
- Secure the best expertise from around the country and internationally to address DHS research priorities?
- Bring together partners from as many regions of the United States as practicable to participate?
- Sponsor open competitions for new or additional research projects?
- Identify and meet appropriate milestones and metrics for success to measure the progress of research and education activities?

B. Transition (15%)

Did the prior COE:

- Engage effectively with the HSE, both locally and nationally?
- Respond in a timely manner to homeland security stakeholders when its expertise or assistance was requested?
- Successfully transition research results to appropriate stakeholders, specifically:
    - Develop strategic transition plans for applied research
    - Demonstrate experience with the technology transition process (e.g., conducting market assessments, applying for patents, filing invention disclosures, obtaining licensing agreements) from academia to the HSE
    - Demonstrate experience with established technology test and

evaluation processes (e.g., piloting, testability, productivity, maintainability, reliability, availability, affordability, human factors, and environmental impacts)

C. MSI, Education and Workforce Development (10%)

Did the prior COE:

- Integrate homeland security related content and research activities into education programs?
- Did the COE establish a multidisciplinary program of study relevant to DHS's mission, including new courses, certificates, degrees, or other targeted initiatives that involved students?
- Develop initiatives for tracking career development of the Center's students in the HSE?
- Have meaningful and substantial partnerships with MSIs?

D. Communications and Integration with the HSE (10%)

Did the prior COE:

- Communicate effectively with its partners and sub-recipients, across the COE network and with external stakeholders such as practitioners and customers?
- Communicate results to homeland security stakeholders?
- Develop effective communications materials (e.g., websites, fact sheets, newsletters, press releases)?

E. Scientific Quality (20%)

Did the prior COE:

- Conduct original and innovative work? i.e., shift current research or paradigms by utilizing novel theoretical concepts, approaches, or methodologies
- Generate influential peer-reviewed publications in the scientific community or lead to new discoveries or areas of investigation?

F. Other Factors (10%)

- DHS S&T reserves the right to consider other factors such as incorporation of the most capable researchers and institutions, in-kind contributions; ability to keep commitments; and strength of commitment to engage in and conduct mission-related research with DHS and others in the HSE.

Example Evaluation

Each reviewer's overall rating for a proposal will be calculated by first multiplying the weight for each criterion by its rating, then adding the weighted scores together for an overall proposal rating.

The charts below provide examples of how one reviewer's overall rating for a proposal would be calculated for each review phase.

Scientific Quality Review (External):

Evaluation Criteria	**Reviewer Score**	**Weight (%)**	**Weighted Score**
Research Program Originality	5	25%	1.25
Project Goals and Methodologies	4	25%	1
Qualifications of Personnel and Suitability of Facilities	3	20%	0.6
Education Program	2	25%	0.5
Costs	3	5%	0.15
External Review Rating			**3.5**

Only those applications meeting the threshold rating for the external review phase will be forwarded to the internal review phase.

DHS Relevancy Review (Internal):

Evaluation Criteria	**Reviewer Score**	**Weight (%)**	**Weighted Score**
Research Program Mission Relevance	5	30%	1.5
Communications and Integration with the HSE	4	15%	0.6
Workforce Development Mission Relevance	4	15%	0.6
Capability Gaps	4	20%	0.8
Transition Strategy	2	20%	0.4
Internal Review Rating			**3.9**

Only those applications meeting the threshold rating for the internal review phase will be forwarded to the site visit review phase.

Site Visit Review:

Evaluation Criteria	Reviewer Score	Weight (%)	Weighted Score
Leadership and Project Management	4	25%	1
Transition	2	15%	0.3
MSI, Education and Workforce Development	3	10%	0.3
Resource Commitment	3	10%	0.3
Communications and Integration with the HSE	4	10%	0.4
Scientific Quality*	4	20%	0.8
Geographic distribution	3	10%	0.3
Site Visit Review Rating			**3.4**

*To emphasize the proposal's scientific quality, the score from the External Review will be used here and is assigned a weight of 20%.

Past Performance Evaluation:**

Evaluation Criteria	Reviewer Score	Weight (%)	Weighted Score
Leadership	2	35%	0.7
Transition	2	15%	0.3
MSI, Education and Workforce Development	5	10%	0.5
Communications and Integration with the HSE	2	10%	0.2
Scientific Quality	2	20%	0.4
Geographic distribution	2	10%	0.2
Past Performance			**2.3**

This evaluation is only applicable to applications where the same department at a lead university has previously led a DHS COE. **Please note that if the university has not previously performed as the lead for a DHS COE, the criteria scores will be neutral, and the overall rating will not be impacted.

Final Rating for New Applicant:

Review	Score	Weight (%)	Weighted Score
Site Visit	3.4	100%	3.4
Final Rating			**3.4**

For applicants who have not previously led a DHS S&T COE, the site visit review rating is the final rating assigned to a proposal and represents the conclusion of the three-phase evaluation process. The results of the site review, combined with recommendations of site visit SMEs, and the SM's professional judgment in consideration of geographic diversity, university resource commitments, etc., determine the selection of the COE lead and partner institutions, subject to negotiations.

Final Rating for Prior COE Leads:

Review	Reviewer Score	Weight (%)	Weighted Score
Site Visit	3.4	75%	2.55
Past Performance	2.3	25%	0.58
Final Rating			**3.13**

For applicants who are prior DHS S&T COE leads, the site visit review rating will be assigned a weight of 75% and past performance will be assigned a weight of 25% to determine the final rating assigned to a proposal. This represents the conclusion of the four-phase evaluation process. The results of the site review and the past performance review, combined with recommendations of site visit SMEs, and the SM's professional judgment in consideration of geographic diversity, university resource commitments, etc., determine the selection of the COE lead and partner institutions, subject to negotiations.

II. Supplemental Financial Integrity Review

If the anticipated federal share of a federal award will be greater than the simplified acquisition threshold, currently $250,000 (see Section 805 of the National Defense Authorization Act for Fiscal year 2018, Pub. L. No. 115-91, OMB Memorandum M- 18-18 at https://www.whitehouse.gov/wp-content/uploads/2018/06/M-18-18.pdf):

A. Prior to making a federal award with a total amount of federal share greater than the simplified acquisition threshold, DHS is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS).
B. An applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM.

C. DHS will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by applicants as described in 2 C.F.R. § 200.205 federal awarding agency review of risk posed by applicants.

E. Federal Award Administration Information

1. **Notice of Award**

Customarily, applicants are notified about evaluation decisions within six months of the application closing date. A summary statement of the scientific review by the peer panel will be provided to each applicant with an award or declination letter. DHS also requires successful applicants to provide responses to comments or suggestions offered by the peer reviewers and revise and resubmit their proposal accordingly. Successful applicants may also be requested to submit a revised budget. DHS will contact the applicant to obtain these materials. Before or after an award, applicants may be required to provide additional quality assurance documentation. A cooperative agreement award will be executed by a DHS Grants Officer authorized to obligate DHS funding. The successful applicant will receive the award and cover letter by e-mail. The successful applicant will have the option to request an original by mail.

After award and subject to agreement from the DHS Program Manager, the selected Center Lead will hold a work plan development workshop with homeland security practitioners to refine the originally proposed work selected as part of this funding opportunity. Project proposals will receive an initial year of funding once DHS has approved a project work plan. Additional funding beyond the first year will depend upon performance and availability of funds. DHS expects this workshop to occur within 60 days of the award.

2. **Administrative and National Policy Requirements**

All successful applicants for DHS grant and cooperative agreements are required to comply with DHS Standard Terms and Conditions, which are available online at: DHS Standard Terms and Conditions.

The applicable DHS Standard Terms and Conditions will be those in effect at the time the award was made unless the application is for a continuation award. In that event, the terms and conditions in effect at the time the original award was made will generally apply. What terms and conditions will apply for the award will be clearly stated in the award package at the time of award.

In addition, successful applicants of this NOFO must accept all conditions of the Terms and Conditions that apply specifically to this COE Award as administered by the DHS Grants and Financial Assistance Division (GFAD) (Appendix A: Terms and Conditions).

Before accepting the award, the authorized official should carefully read the award package for instructions on administering the grant award and the terms and conditions associated with responsibilities under Federal Awards. Recipients must accept all conditions in this NOFO as

well as any Special Terms and Conditions in the Notice of Award to receive an award under this program.

3. **Reporting**

See Appendix A: Terms and Conditions for the reporting requirements (financial and performance) successful applicants must comply with during the award's period of performance.

1) Federal Financial Reporting Requirements

See Appendix A: Terms and Conditions

The Federal Financial Report (FFR) form is available online at: SF-425 OMB #4040-0014

2) Programmatic Performance Reporting Requirements

Appendix A: Terms and Conditions

3) Closeout Reporting Requirements

Within 120 days after the end of the period of performance, or after an amendment has been issued to close out a grant, recipients must submit the following:

1) The final request for payment, if applicable.
2) The final FFR (SF-425).
3) The final progress report detailing all accomplishments.
4) A qualitative narrative summary of the impact of those accomplishments throughout the period of performance.
5) Other documents required by this NOFO, terms and conditions of the award, or other DHS FAO guidance.

If applicable, an inventory of all construction projects that used funds from this program must be reported with the final progress report.

After these reports have been reviewed and approved by the DHS FAO, a closeout notice will be completed to close out the grant. The notice will indicate the period of performance as closed, list any remaining funds that will be de-obligated, and address the requirement of maintaining the grant records for three years from the date of the final FFR, unless a longer period applies, such as due to an audit or litigation, for equipment or real property used beyond the period of performance, or due to other circumstances outlined in 2 C.F.R. §200.334, Retention Requirements for Records.

In addition, any recipient that issues subawards to any subrecipient is responsible for closing out those subawards as described in 2 C.F.R. §200.344, Closeout. Recipients acting as pass-through entities must ensure that they complete the closeout of their subawards in time to submit all necessary documentation and information to the DHA FAO during the closeout of their prime grant award.

The recipient is responsible for returning any funds that have been drawn down but remain as unliquidated on recipient financial records.

4) Disclosing Information per 2 C.F.R. §180.335

This reporting requirement pertains to disclosing information related to government-wide suspension and debarment requirements. Before a recipient enters a grant award with the DHS FAO, the recipient must notify the DHS FAO if it knows if it or any of the recipient's principals under the award fall under one or more of the four criteria listed at 2 C.F.R. § 180.335:

a) Are presently excluded or disqualified.
b) Have been convicted within the preceding three years of any of the offenses listed in 2 C.F.R. § 180.800(a) or had a civil judgment rendered against it or any of the recipient's principals for one of those offenses within that time period.
c) Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses listed in 2 C.F.R. § 180.800(a).
d) Have had one or more public transactions (federal, state, or local) terminated within the preceding three years for cause or default.

At any time after accepting the award, if the recipient learns that it or any of its principals falls under one or more of the criteria listed at 2 C.F.R. § 180.335, the recipient must provide immediate written notice to the DHS FAO in accordance with 2 C.F.R. § 180.350.

5) Reporting of Matters Related to Recipient Integrity and Performance

Per 2 C.F.R. Part 200, Appendix I § F.3, the additional post-award reporting requirements in 2 C.F.R. Part 200, Appendix XII may apply to applicants who, if upon becoming recipients, have a total value of currently active grants, cooperative agreements, and procurement contracts from all federal awarding agencies that exceeds $10,000,000 for any period during the period of performance of an award under this funding opportunity. Recipients that meet these criteria must maintain current information reported in FAPIIS about civil, criminal, or administrative proceedings described in paragraph 2 of Appendix XII at the reporting frequency described in paragraph 4 of Appendix XII.

6) Monitoring and Oversight

Per 2 C.F.R. §200.329, the DHS FAO, through its authorized representatives, has the right, at all reasonable times, to conduct desk reviews, make site visits to review project accomplishments and management control systems to review project accomplishments and to provide any required technical assistance. During site visits, the DHS FAO will review grant recipients' files related to the grant award. As part of any monitoring and program evaluation activities, grant recipients must permit the DHS FAO, upon reasonable notice, to review grant-related records and to interview the organization's staff and contractors regarding the program. Recipients must respond in a timely and accurate manner to the DHS FAO requests for information relating to the grant program**.**

7) Program Evaluation

Recipients and subrecipients are encouraged to incorporate program evaluation activities from the outset of their program design and implementation to meaningfully document and measure their progress towards the outcomes proposed Title I of the Foundations for

Evidence-Based Policymaking Act of 2018 (Evidence Act), Pub. L. No. 115-435 (2019) defines evaluation as "an assessment using systematic data collection and analysis of one or more programs, policies, and organizations intended to assess their effectiveness and efficiency." Evidence Act § 101 (codified at 5 U.S.C. § 311). Credible program evaluation activities are implemented with relevance and utility, rigor, independence and objectivity, transparency, and ethics (OMB Circular A-11, Part 6 Section 290).

Evaluation costs are allowable costs (either as direct or indirect), unless prohibited by statute or regulation, and such costs may include the personnel and equipment needed for data infrastructure and expertise in data analysis, performance, and evaluation. (2 C.F.R. §200).

In addition, recipients are required to participate in a DHS-led evaluation if selected, which may be carried out by a third-party on behalf of the Program Office or DHS. By accepting grant funds, recipients agree to participate in the evaluation, which may include analysis of individuals who benefit from the grant, and provide access to program operating personnel and participants, as specified by the evaluator(s) during the award.

F. DHS Awarding Agency Contact Information

1. **Grants Officer**
   The Grants Officer is the DHS official that has the full authority to negotiate, administer and execute all terms and conditions of this Award in concurrence with the Program Officer.

   Name: Stephanie Dawkins

   Email: stephanie.dawkins@hq.dhs.gov

   Program Manger
   The Program Manager shall be the DHS staff member responsible for monitoring the completion of work and technical performance of the projects or activities described in the Program Narrative statement.

   Name: Chelsea Thompson

   Email: chelsea.thompson@hq.dhs.gov

2. **Office of University Programs Mailing Address**
   S&T Stop 0205

   Department of Homeland Security

   245 Murray Lane, SW

   Washington, DC 20528-0217

G. Other Information

1. **Period of Performance Extensions**

   Extensions to this program are allowed. DHS will base extension approvals on the availability of funds, acceptable performance, and the reason(s) for the requested extension. DHS will not provide extensions solely to enable universities to expend unspent funds. Per the Terms and Conditions (Appendix A): Extensions to the Period of Performance can only be authorized in writing by the DHS Grants Officer.

   b. The extension request shall be submitted to the DHS Grants Officer sixty (60) days prior to the expiration date of the performance period.

   c. Requests for time extensions to the Period of Performance will be considered, but will not be granted automatically, and must be supported by adequate justification to be processed. The justification is a written explanation of the reason or reasons for the delay; an outline of remaining resources/funds available to support the extended Period of Performance; and a description of performance measures necessary to complete the project. Without performance and financial status reports current and justification submitted, extension requests shall not be processed.

   DHS has no obligation to provide additional resources/funding as a result of an extension.

2. **FEMA Financial Assistance Programs for Infrastructure**

   a. **Build America, Buy America Act**

   Recipients and subrecipients must comply with the Build America, Buy America Act (BABAA), which was enacted as part of the Infrastructure Investment and Jobs Act §§ 70901-70927, Pub. L. No. 117-58 (2021); and Executive Order 14005, Ensuring the Future is Made in All of America by All of America's Workers. See also Office of Management and Budget (OMB), Memorandum M-22-11, Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure.

   After FEMA's General Applicability Public Interest waiver expires on January 1, 2023 (or is otherwise extended), none of the funds provided under this program may be used for a project for infrastructure unless the iron and steel, manufactured products, and construction materials used in that infrastructure are produced in the United States.

   The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

To see whether a particular FEMA federal financial assistance program is considered an infrastructure program and thus required to include a Buy America preference, please see Programs and Definitions: Build America, Buy America Act | FEMA.gov.

Waivers:

When necessary, recipients (and subrecipients through their pass-through entity) may apply for, and FEMA may grant, a waiver from these requirements.

A waiver of the domestic content procurement preference may be granted by the agency awarding official if FEMA determines that:

1) Applying the domestic content procurement preference would be inconsistent with the public interest.

2) The types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality.

3) The inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25%.

For FEMA awards, the process for requesting a waiver from the Buy America preference requirements can be found on FEMA's website at: "Buy America" Preference in FEMA Financial Assistance Programs for Infrastructure | FEMA.gov.

Definitions:

Construction materials: an article, material, or supply—other than an item primarily of iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of non-ferrous metals, plastic, and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables), glass (including optic glass), lumber, paint, and drywall.

Domestic content procurement preference: Means all iron and steel used in the project are produced in the United States; the manufactured products used in the project are produced in the United States; or the construction materials used in the project are produced in the United States.

Federal financial assistance: Generally defined in 2 C.F.R. § 200.1 and includes all expenditures by a federal agency to a non-federal entity for an infrastructure project, except that it does not include expenditures for assistance authorities relating to major disasters or emergencies under sections 402, 403, 404, 406, 408, or 502 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act relating to a major disaster or

emergency declared under section 401 or 501, respectively, or pre and post disaster or emergency response expenditures.

Infrastructure: infrastructure projects which serve a public function, including at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property; and structures, facilities, and equipment that generate, transport, and distribute energy.

Produced in the United States: means the following for:

1) **Iron and steel:** All manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2) **Manufactured products:** The product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3) **Construction Materials:** All manufacturing processes for the construction material occurred in the United States.

Project: is any activity related to the construction, alteration, maintenance, or repair of infrastructure in the United States

3. **Disclosure**

Risk Assessment Evaluation

DHS staff will evaluate the risks to the program posed by each applicant, including conducting due diligence to ensure an applicant's ability to manage federal funds. This evaluation is in addition to the evaluation of the applicant's eligibility and the quality of its application on the basis of the Selection Criteria, and results from this evaluation may assist funding decisions. If an award is made, DHS may apply special conditions that correspond to the degree of risk of the award.

In evaluating risks, DHS may consider the following:

- Financial stability;
- Quality of management systems and ability to meet the management standards prescribed in applicable OMB Guidance;
- Applicant's record in managing previous DHS awards, cooperative agreements, or procurement awards, including:
    1. Timeliness of compliance with applicable reporting requirements
    2. Accuracy of data reported
    3. Conformance to the terms and conditions of previous federal awards

4. If applicable, the extent to which any previously awarded amounts will be expended prior to future awards
5. Information available through OMB-designated repositories of government-wide eligibility qualification or financial integrity information, such as: Federal Awardee Performance and Integrity Information System (FAPIIS), UEI and SAM
6. Reports and findings from single audits performed under Subpart F – Audit Requirements, 2 C.F.R. Part 200 and findings and reports of any other available audits
7. Applicant organization's annual report
8. Publicly available information, including information from the applicant organization's website
9. Applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on award recipients.

In addition, organizations who have not received prior DHS GFAD awards may be required to complete a risk assessment questionnaire as part of the pre-award financial and administrative review.

Applicant Disclosure of High-Risk Status

Applicants are to disclose if they are currently designated as high risk by a federal awarding agency. This includes, but is not limited to, any status requiring additional oversight by a federal awarding agency due to past programmatic, administrative, or financial concerns. If an applicant is designated as high risk by a federal awarding agency, it should provide an explanation with the application package and include the following information:

- The federal awarding agency that assigned the high-risk status;
- The federal awarding agency's point of contact for the risk status, including name, phone number and email address;
- Date of the risk status designation;
- Reason(s) for the risk status.

DHS seeks this information to ensure appropriate federal oversight of all grant awards. The disclosure of an organization's risk status does not disqualify it from receiving an award; however additional grant oversight may be required. If necessary, this information will be provided in the award documentation. Failure to disclose high risk status may result in award termination or other remedies.

APPENDIX A: COOPERATIVE AGREEMENT TERMS AND CONDITIONS

CENTER OF EXCELLENCE (COE)

GRANTS AND FINANCIAL ASSISTANCE DIVISION (GFAD)

This Appendix is included as a separate attachment to this NOFO.

Please see the Attachment titled "FY23 COE Terms and Conditions."

APPENDIX B: Acronyms

List of commonly used acronyms in this NOFO:

ARPA:	Arctic Research and Policy Act
CISA:	Cybersecurity and Infrastructure Security Agency
COE:	Center of Excellence
DHS:	U.S. Department of Homeland Security
E2E:	End to End
EPA:	Environmental Protection Agency
FEMA:	Federal Emergency Management Agency
FFRDC:	Federally Funded Research and Development Center
HBCU:	Historically Black College and University
HSI:	Hispanic Serving Institution
HSE:	Homeland Security Enterprise
IUU:	Illegal, Unreported, and Unregulated
MSI:	Minority Serving Institution
NIST:	National Institute of Standards and Technology
NOFO:	Notice of Funding Opportunity
NSAR:	National Strategy for the Arctic Region
OMB:	Office of Management and Budget
OUP:	Office of University Programs
S&T:	Science and Technology
SLTT:	State, Local, Tribal, Territorial
SAM:	System for Award Management
SMEs:	Subject Matter Experts
STEM:	Science, technology, engineering, and mathematics
U.S. CBP:	United States Customs and Border Protection
UEI:	Unique entity identifier
USCG:	United States Coast Guard

APPENDIX C: End-to-End Approach

The End-to-End (E2E) approach blends concepts from various management models to deliver university created technologies that meet the needs of DHS and other HSE customers. The approach supports the development of relevant knowledge, technologies, and capabilities using a milestone-driven approach to transfer and transition efforts from the Centers to appropriate partners or customers. The E2E initiative includes phased-milestone reviews, continual market research, early and ongoing customer involvement, intellectual property management, test and evaluation exercises, and strategic partnering (Figure 3).

During the 10-year period of performance, OUP and the COE leadership will conduct a Biennial Review (every two years) to review each project within the COE portfolio. Low-scoring projects will be eliminated, and funding will be reallocated to new or existing projects. At the conclusion of the first Biennial Review, the COE must identify high-scoring project(s) that will utilize the E2E approach, and then form a supporting project team. This team of people must represent all phases of the technology creation-transition-adoption continuum, from early stages of research to use in practice. Using the E2E approach will focus the project team on proposed research goals, data collection, analytical approaches, performance metrics, outcomes and outputs, market assessments, potential transition paths, test and evaluation plans, intellectual property issues, legal and privacy issues, practical barriers to technology adoption, and development of comprehensive case studies.

The E2E approach involves much more hands-on management, planning, and engagement with outside parties by a COE Director or management team than is common in most academic research. The E2E approach can encompass a single larger research project, or it can integrate several related projects under the direction of a single management team that works closely with the researchers, project advisors, commercial partners, HSE customers, and SMEs. There may be significant uncertainty in assessing potential outcomes for early stage E2E initiatives. Some uncertainty will be eliminated by conducting a thorough market assessment for the technologies being developed. Most importantly, COE lead applicants must demonstrate a willingness to partner with customers to facilitate transition of their research into use and describe how they would accomplish this. Note: DHS does not expect all team members of principal investigators to have a complete understanding of transition issues, but to be able to identify and recruit people that do for as long as needed.

The following are key characteristics of the E2E project approach:

- A multi-year timeframe (E2E projects should be designed to generate implementable results within 3 to 5 years)
- A multi-disciplinary approach
- A formal commitment, (e.g., Memorandum of Understanding (MOU), by the intended customers to work directly with the COE throughout the life of the project) [Note: an MOU is not required at the application stage]
- Clear understanding and deadlines
- Exchange opportunities for students, researchers, and homeland security practitioners to foster mutual understanding of academic research and real-life experience in operational environments, and

- A transition plan that addresses the following questions:
    - What is the customer need?
    - What is the gap in knowledge, capabilities, or technology?
    - How would the proposed project significantly advance existing customer capabilities? (i.e., how will the research make the Nation more secure or make homeland security operations more cost-effective)?
    - Who are the key partners to enable effective transition?
    - How would the COE address intellectual property (IP) challenges, and how would the COE share IP among team members?
    - What is the potential market for the technology or other research results? (e.g., recipients will conduct both a technology "horizon scan" and a market assessment at the appropriate times)
    - Who would be responsible for post-transition management, repair, updates, training, and operations and maintenance?
    - At what point would the research product(s) be handed off to a customer? (e.g., will the output become part of an official government system, remain a service offering within the university complex, or be delivered (sold, licensed) to a commercial interest)?
    - How would the Center work with customers to identify testing, evaluation, or standards needed for customers to incorporate outputs into their operations?
    - What training curricula or materials would be needed to support successful transition?
    - What are the metrics for measuring the ongoing progress and success of the effort?

To recap, a successful E2E project will capture the life cycle of a research effort starting with an idea and ending with a working product in the hands of a customer. In addition, E2E should support education and training opportunities in real-world venues for new and existing faculty, research staff, and students. The site visit presentation to DHS leadership should provide an overview of how the prospective COE leadership team would expect the E2E project to reach fruition.

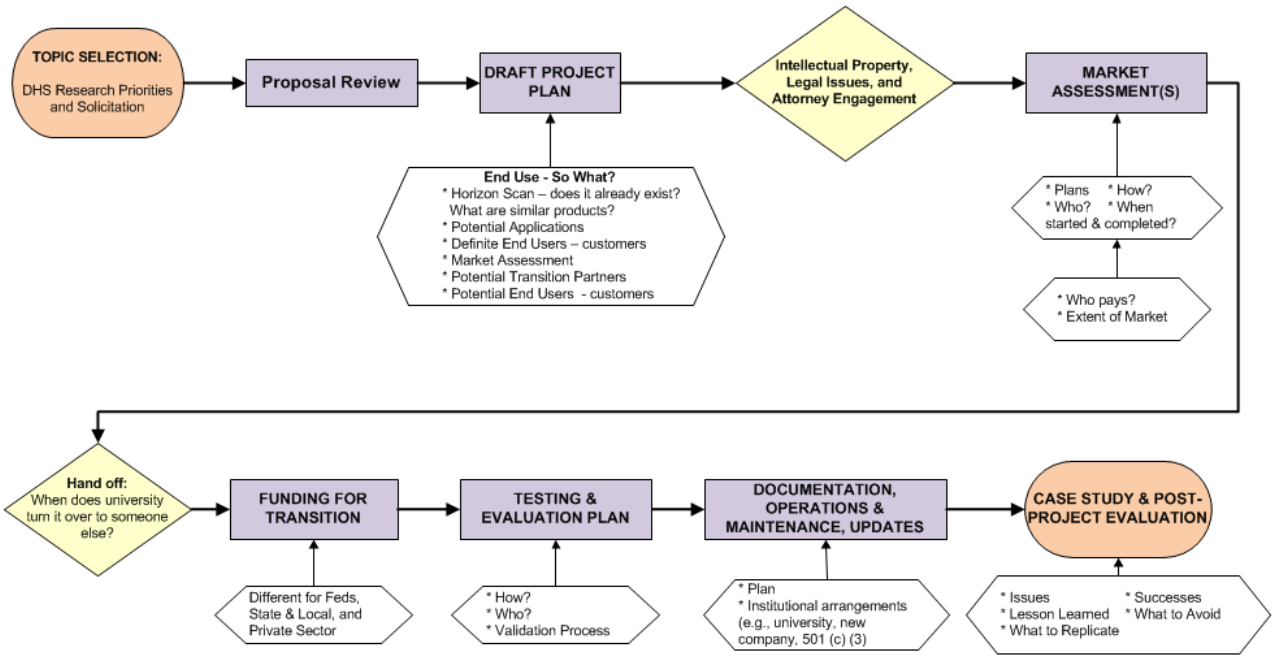

Figure 3: E2E Approach

APPENDIX D: References for Themes, Topics and Questions

The following list of publications is provided as a resource for applicants. While this list is not exhaustive, it does represent key policy documents and reports used in the development of this NOFO. Applicants are expected to be aware of the diversity of available studies, policy documents, and findings relevant to this NOFO.

References

- DHS Lexicon: https://www.dhs.gov/publication/dhs-lexicon
- 2022 National Strategy for the Arctic Region: https://www.whitehouse.gov/wp-content/uploads/2022/10/National-Strategy-for-the-Arctic-Region.pdf
- 2021 DHS Strategic Approach for Arctic Homeland Security: https://www.dhs.gov/publication/strategic-approach-arctic-homeland-security
- 2019 USCG Arctic Strategic Outlook: https://www.uscg.mil/arctic/
- 2021 DHS Strategic Framework for Addressing Climate Change: https://www.dhs.gov/sites/default/files/publications/dhs_strategic_framework_10.20.21_final_508.pdf
- 2019 Congressional Research Service (CRS) Report, Changes in the Arctic: Background and Issues for Congress: https://crsreports.congress.gov/product/pdf/R/R41153/144
- Arctic Research and Policy Act (ARPA) of 1984: https://www.nsf.gov/geo/opp/arctic/iarpc/arc_res_pol_act.jsp#112
- 2012 Presidential Policy Directive 21 (PPD-21), Critical Infrastructure Security and Resilience: https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil
- 2011 PPD-8, National Preparedness: https://www.dhs.gov/presidential-policy-directive-8-national-preparedness
- 2013 Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA): https://oaarchive.arctic-council.org/handle/11374/529
- 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic: https://oaarchive.arctic-council.org/handle/11374/531
- 2017 Agreement on Enhancing International Arctic Scientific Cooperation: https://www.arctic.gov/agreement-on-enhancing-international-arctic-scientific-cooperation/
- DHS Strategic Plan FY2020 – 2024: https://www.dhs.gov/publication/department-homeland-securitys-strategic-plan-fiscal-years-2020-2024
- 2019 U.S. Committee on the Maritime Transportation System, A Ten-Year Projection of Maritime Activity in the U.S. Arctic Region, 2020 – 2030: https://www.cmts.gov/assets/uploads/documents/CMTS_2019_Arctic_Vessel_Projection_Report.pdf

- FEMA Community Lifelines: https://www.fema.gov/emergency-managers/practitioners/lifelines
- Interagency Arctic Research Policy Committee of the National Science and Technology Council, Arctic Research Plan 2022 – 2026: https://www.iarpccollaborations.org/plan/index.html
- U.S. Arctic Research Commission, Report on the Goals and Objectives for Arctic Research 2019 – 2020: https://www.arctic.gov/goals-and-objectives/
- CISA Critical Infrastructure Sectors: https://www.cisa.gov/critical-infrastructure-sectors
- CISA National Risk Management: https://www.cisa.gov/national-risk-management
- FEMA National Risk and Capability Assessment: https://www.fema.gov/emergency-managers/risk-management/risk-capability-assessment
- FEMA National Risk Index: https://hazards.fema.gov/nri/
- GAO-22-104152, Offshore Oil Spills: Additional Information is Needed to Better Understand the Environmental Tradeoffs of Using Chemical Dispersants: https://www.gao.gov/products/gao-22-104153
- 2018 DHS Resilience Framework: https://www.dhs.gov/sites/default/files/publications/dhs_resilience_framework_july_2018_508.pdf
- U.S. Arctic Research Commission, Report on the Goals and Objectives for Arctic Research 2023 – 2024: https://www.arctic.gov/goals-and-objectives/
- 2016 DHS Directive 023-03, Climate Resilience: https://www.dhs.gov/sites/default/files/publications/mgmt/environmental-management/mgmt-dir_023-03-climate-resilience.pdf
- Defense Acquisition University (DAU) Stage-Gate Process: https://www.dau.edu/tools/tpmm/Pages/solutions/Stage-GateProcess.aspx

APPENDIX E: Tips for Applicants

This checklist is meant to provide applicants with a starting place in developing and submitting a responsive proposal. Applicants will be evaluated against the criteria outlined in the NOFO, **not** this list.

Did you:

- ☐ Read entire NOFO
- ☐ Ensure you are eligible to apply (Section C. Eligibility Information)
- ☐ Familiarize yourself with past and current research at the current COE Network at https://www.dhs.gov/st-centers-excellence
- ☐ Respond to all required sections described in in the NOFO. Areas to consider may include:
  - ☐ How you will build your team to cover the necessary skills in program management, intellectual property, technology test and evaluation, finance, and scientific expertise
  - ☐ How you communicate your knowledge of DHS operations and technical needs
  - ☐ How you would address the major theme areas
  - ☐ Topics you propose to address for each theme area
  - ☐ Two example End-to-End (E2E) projects in different theme areas
  - ☐ How your research program is original and/or innovative
  - ☐ Project goals, approaches, and methodologies
  - ☐ Relevance to the homeland security mission for every project you propose
  - ☐ How project results would be transitioned to customers
  - ☐ How your program will be integrated with both internal and external partners
  - ☐ Qualifications of personnel and suitability of facilities
  - ☐ How you will manage the Center
  - ☐ How you will work closely with DHS Component agencies and other homeland security practitioners to identify priority research
  - ☐ How education programs will complement the research to increase homeland security community workforce development, for both current and future workforce.
- ☐ Submit all forms listed in the "Content and Form of Application Submission," Section D, Item 10.
- ☐ Ensure that funding requested does not exceed the available funding for the NOFO
- ☐ Ensure that the project period requested does not exceed the project period in the NOFO
- ☐ Submit application on Grants.gov by Deadline: June 19, 2023 at 11:59:59 PM EDT
- ☐ Mark your calendar for the Informational Webinar for interested applicants on May 9, 2023 at 4:00 PM EDT.