

MSRDC Request for Information for
Department of Homeland Security

The Department of Homeland Security (DHS) Office of University Programs and the Edgewood Chemical and Biological Center's MSI STEM Research and Development Consortium (MSRDC) program is issuing a Request for Information (RFI). The Request for Information is intended to provide DHS interest, insights, and capability relating to three (3) draft research topics. MSRDC is requesting that responses in the form of a Quad Chart, and supporting documentation provided in the form of a white paper, or other informative data that demonstrates pertinent capability. Submissions are requested to be received by the applicable due date and time. Institutions that do not respond to this RFI may still pursue any future Request for Research Project Proposal related to this RFI. To ensure uniformity in assessing all responses, MSRDC request adhering to the following guidelines:

Quad Chart Submission

Offerors shall prepare and upload a one-page (8 ½ by 11 inches) quad chart in response to this RFI. Use font sizes of 10 point or greater. If more than one page is submitted, only the first page will be evaluated.

Due Date and Time

MSRDC requests your quad chart via email to info@msrdconsortium.org no later than (NLT) 3:00PM EST, Friday, October 19, 2018.

Electronic File Format

The quad chart shall be submitted to MSRDC in Adobe Acrobat (PDF – portable document format). ZIP files and other application formats are not acceptable. The document must be print-capable, without password, and no larger than 1024 KB. File names cannot contain spaces or special characters.

Quad Chart Content

A quad chart conveys the essence of the proposed solution for a single requirement. When preparing a submission, the offeror shall ensure that the specific criteria of the requirement are addressed, the solution is clear, and can be accomplished with the proposed technology, cost, and schedule. The quad chart includes a document header and four quadrants. The Quad Chart format and sample may be located on our website at www.msrdconsortium.org.

1. Header Information

Header information shall include Agency Name, Project Reference, and the Proposal Title. The date and member name should be included along with the appropriate document markings.

2. Top Left Quadrant, Graphical Depiction

The top left quadrant is a graphical depiction, photograph, or artist's concept of the proposed solution or prototype. Include labels or brief descriptive text as needed for clarification. Ideally, this will convey the prototype concept, use, capability, and any

relevant size or weight relationships based on the published requirement.

3. Top Right Quadrant, Operational and Performance Capabilities

The top right quadrant contains the operational and performance capabilities summary. Describe any basic, new, or enhanced capabilities the system will provide to meet the published requirement. In bullet form, list key aspects of performance, capability, operational use, relevant software or hardware specifications, and planned interface and/or compatibility. The offeror is only required to submit past performance information in response to a request for full proposal.

4. Bottom Left Quadrant, Technical Approach

The bottom left quadrant contains the proposed technical approach. Specifically, describe the technology involved, how it will be used to solve the problem, actions done to date, and any related ongoing efforts. Briefly describe the tasks to be performed for each phase. A bulleted list is acceptable.

5. Bottom Right Quadrant, Cost and Schedule

The bottom right quadrant contains the Rough Order of Magnitude (ROM) and Schedule, Products and Deliverables, and Contact Information. ROM and Schedule shall be proposed by phase and include the cost, period of performance (POP), and exit criteria for each phase. A total cost and POP that combines all phases shall also be included. Products and Deliverables shall include, by phase, a list of all prototype hardware and software along with the required data as described in “Product and Deliverable Requirements” in section 2 of this document. Contact Information shall include the submitter’s company name, POC, phone number, and email address. Include any significant teaming partner (contact information) relevant to the evaluation.

Additional supporting Documentation: Offers may provide supporting documentation not to exceed 5 pages total. Supporting documentation may be in the form of a white paper, project synopsis, responses to project questions and rhetorical questions regarding the project descriptions, background on faculty PIs, collaboration partners, capabilities, students, facilities, project relevant publication references, and past experience with DHS components, to name a few.

Debriefings for Quad Charts and supporting documentation will not be conducted. In general, RFI submissions are used for the purpose of determining the applicability of potential DHS Projects to MSRDC member capabilities. The government reserves the right to amend or replace any project with a different project topic without any further review. However, it is up to and in the interest of the government to issue a follow-on Request for Research Project Proposal.

The Department of Homeland Security is the latest agency to partner with MSRDC and the first civilian agency. This RFI is a follow on from our DHS Webinar held on May 16, 2018. MSRDC encourages all interested institutions to respond to this RFI.

Project 1

Workforce Development: Course Curriculum and Training of U.S. Customs and Border Protection Agriculture Specialists on the Fundamentals and Advances in Biothreat Visualization, Risk Assessment, and Impact Analysis

U.S. Customs and Border Protection (CBP) agriculture mission is to safeguard American agriculture and natural resources by preventing entry of plant pests and foreign animal diseases through inspection of agricultural imports and enforcing compliance to partner government agencies (*e.g.*, USDA, FWS, FDA etc.) regulatory requirements. The ports of entry is a very complex environment. Detecting more than 1500 human and animal diseases and more than 200 plant pests of which 80% occur mostly outside of the US moving through trade and travel is very challenging. This difficulty is exacerbated by the advances in genetic engineering of potentially dual-use organisms that may be intentionally introduced via the supply chain to cause catastrophic harm to public health, the agriculture industry, and U.S. economy.

CBP Agriculture Specialists (CBPAS) are CBP frontline officers that are specifically task of inspecting all agricultural and biological imports to prevent introduction of plant pests and foreign animal diseases at U.S. ports of entry. CBPAS are trained in USDA plant pest detection and regulation; as well as, on CBP policy and enforcement procedures. To be more effective, the competencies of CBPAS must be enhanced by providing them with a deeper understanding of the biological threat and risks they are facing every day. For this call, the performer will:

- Develop a training program for CBPAS that will cover historical perspectives and current events/trends in agro/bio-terrorism; global awareness of emerging; re-emerging, and rapidly-evolving biological threats; pathogenicity and epidemiology of animal pathogenic diseases with zoonotic properties; detecting biological threats in goods and people; advances in bioscience and biotechnology – Impact assessment; mechanisms and tools in the production and delivery of bioweapons; entry points and pathways of infection/contamination in the agriculture and food supply chain; identifying and preventing potential global supply chain disruptions; integrating multi-source, disparate data into actionable intelligence; use of artificial intelligence and other tactical approaches for impact and risk assessment; and, other topics related to agriculture and food security.
- Provide 3 or 4 pilot training of CBPAS at the performer's institution; and,
- Upon transition to the user of the course materials, provide deployment support of the training.

Additional Project Questions for MSIs Submitting Proposals:

- Can the MSI provide knowledge and training on animal disease epidemiology and pathogenic animal diseases, with zoonotic properties, that can be used as agro/bio-terrorism agents?
- What additional training should the field personnel have to make them better equipped in fulfilling their homeland security-related agriculture mission?
- What additional knowledge should the CBPAS have to ensure their safety in the workplace and in handling biological materials?

Project 2

Federal Emergency Management Agency (FEMA) – Watershed Hazard Mitigation Infrastructure Inventory

The performer will assist FEMA’s Individual and Community Development Division in the development of surveys, reports, and other resources to improve emergency preparedness and reduce barriers to preparedness. Historical disaster outcomes demonstrate how demographic and socioeconomic factors exacerbate the impact of these events. Poverty, race, limited English proficiency, age, and other demographic, cultural, and socio-economic variables can significantly inhibit people’s ability to take steps to prepare. Collectively, relative preparedness levels among historically underserved populations lag behind the general population. Deliverables may change how ICPD/FEMA communicates and collaborates with historically underserved populations, potentially saving lives in our Nation’s communities disproportionately affected by disaster.

Potential Tasks:

- Create a hazard risk inventory for flooding in the U.S. to increase the effectiveness of current mitigation measures.

Project 3

Federal Emergency Management Agency (FEMA) – Emergency Disaster Literacy

Building on the Patient Protection and Affordable Care Act of 2010, Emergency Disaster Literacy (EDL) is the degree to which an individual has the ability to acquire, assess, understand and communicate, basic information about how disasters can threaten his/her safety at home and in the community and to think of ways to reduce the impact, or prevent disasters altogether. Furthermore, EDL skills allow the individual to either make sense of emergency disaster information and services or use the information to prevent or help mitigate the impact of a disaster or provide information and services about emergency disaster management to others.

According to studies from the U.S. Department of Education, 32 million adults in the U.S. cannot read. The impact of limited literacy disproportionately affects lower socioeconomic and minority groups. This means that they are unable to understand and effectively use or apply basic information and comprehend complex instruction and precautionary measures, including how to prepare for a disaster. Emergency Disaster Literacy (EDL) is the extent to which an individual or a community has the capacity to understand, decide and implement the actions needed before, during and after a disaster. This action ultimately serves to safeguard themselves, their families, their property, and their community.

Accomplishing the goal of EDL requires more than handing out material to individuals with low EDL who can neither read nor understand them. We must work concomitantly to brand EDL as a tool for survival.

The research findings will help to:

- Identify common barriers to low EDL among individuals and work to positively address them

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- Identify community resources to improve EDL
- Guide the development of strategies to help identify individuals or communities with, or at risk for low EDL and work to address them
- Identify strategies to improve the navigation of communication materials to the community with reference to print, oral, electronic, etc.

Potential Tasks:

- Identify causes of low EDL among minority population
- Identify community resources to improve EDL among minority populations