Overview of the DOE SBIR/STTR Proposal Preparation Process

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Dawnbreaker

November 18, 2022

AGENDA

- Locating needed resources
- What should I do when the Topics are released
- Important dates
- Do I have to wait until the Funding Opportunity Announcement is released to start working on my proposal
- What does it take to be successful with DOE?

Locating Needed Resources

U.S. DEPARTMENT OF ENERGY | Office of Science

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Fiscal Year		
FY24 (Future)	**FY23 (Current)**	FY22 (Closed)

2023

Phase I	Release 1	Release 2
Topics Issued	Monday, July 11, 2022	Monday, November 7, 2022
Document	Phase I Release 1 Topics	Phase I Release 2 Topics
Phase 0 Application Assistance (free for first time applicants) starts	Monday, July 11, 2022	Monday, November 7, 2022
Topic Webinar, week of	Webinar 1: Topics 1-15 Slides Webinar 2: Topics 16-24 Slides	November 15, 2022: Topics 1- 9 & 22-28 Register November 16, 2022: Topics 10 - 21 Register November 17, 2021: Topics 29 - 41 Register
FOA Issued	Monday, August 8, 2022	Monday, December 12, 2022
Document	DE-FOA-0002783	
FOA Webinar	Friday, August 12, 2022 Slides	Friday, December 16, 2022*
Letters of Intent (LOI) Due	Monday, August 29, 2022 5:00pm ET	Tuesday, January 3, 2023 5:00pm ET
Non-responsive LOI Feedback Provided	Monday, September 19, 2022	Tuesday, January 24, 2023
Full Applications Due	Monday, October 17, 2022 11:59pm ET	Tuesday, February 21, 2023 11:59pm ET
Award Notification	Tuesday, January 10, 2023**	Monday, May 15, 2023**
Projected Grant Start Date	Tuesday, February 21, 2023	Monday, June 26, 2023

Contact the DOE SBIR/STTR Programs Office

Address

U.S. Department of Energy
SC-29/Germantown Building
1000 Independence Ave., SW
Washington, DC 20585

Phone

Tel(301) 903-5707
Fax(301) 903-5488

Email

Send us a message

sbir-sttr@science.doe.gov

Simply type **DOE SBIR FOA** in your browser

DOE SBIR/STTR Topics Document

- The DOE is unique in that its topics are released a month BEFORE the solicitation is released.
  - **Download Topics document TODAY!**
- The solicitation is called a Funding Opportunity Announcement (FOA)
- The topics are organized by Office
  - There are nine offices participating in the current topics document

DOE SBIR/STTR Topics Document

- The topics document states IF, you can submit an SBIR or STTR proposal in response to a topic.
- The topics document indicates the award ceiling on each topic
- A contact's name is provided for each subtopic
- The topics document may be updated from time to time
- You must respond to a Topic and a Subtopic

U.S. Department of Energy

Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Program

Topics

FY 2023
Phase I
Release 2

November 7, 2022

- Office of Cybersecurity, Energy Security, and Emergency Response
- Office of Defense Nuclear Nonproliferation
- Office of Electricity
- Office of Energy Efficiency and Renewable Energy
- Office of Environmental Management
- Office of Fossil Energy and Carbon Management
- Office of Fusion Energy Sciences
- Office of High Energy Physics
- Office of Nuclear Energy

Anatomy of Topics document

Office

Topic #

Subtopic letters

PROGRAM AREA OVERVIEW: OFFICE OF CYBERSECURITY, ENERGY SECURITY, AND EMERGENCY RESPONSE

The Office of Cybersecurity, Energy Security, and Emergency Response (CESER) leads the Department of Energy's emergency preparedness and coordinated response to disruptions to the energy sector, including physical and cyber-attacks, natural disasters, and man-made events. Risk Management Tools and Technologies (RMT) is a program within the CESER office that works to develop innovative technologies to aid power systems in adapting to and surviving from potential cyberattacks.

The RMT program leverages its partnerships with stakeholders within electricity generation, transmission, and distribution along with entities that represent the secure delivery of natural gas and petroleum to guide technology development that enhances energy systems cybersecurity without impeding normal operations. Research funding is provided to a diverse range of researchers representing asset owners/operators, supply chain vendors, national laboratories, and academia. All RMT funded research is intended for demonstration with an entity that represents the potential user of the technology to aid technology transition into wide area adoption.

For additional information regarding CESER's activities and priorities, click here. Click here to read the CESER Blueprint. Information regarding current RMT' funding can be found here . Note: RMT was formerly called CEDS.

Further information regarding the challenges and needs associated with the cybersecurity of the Nation's energy infrastructure can be found in the 2018 releases of the Department's Multiyear Plan for Energy Sector Cybersecurity.

C56-01. ENERGY SYSTEMS CYBERSECURITY

Maximum Phase I Award Amount: $200,000	Maximum Phase II Award Amount: $1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: NO
Accepting SBIR Fast-Track Applications: NO	Accepting STTR Fast-Track Applications: NO

Research in cybersecurity for energy delivery systems is focused on enhancement of operational technology (OT) that aids power systems to adapt and survive from a cyberattack and continue safe operations. This research topic requests applications to develop proof of concept for unique and innovative solutions that address a need for the cyber security for the energy sector. Selected applications must include a scope of work that will lead up to, but will not include, the development of a demonstration prototype. These solutions can include, but are not limited to, new capabilities for defending critical infrastructure and sensitive networks against cyberattacks and supply chain attacks, improved authentication mechanisms, zero-trust architectures, and better intrusion detection capabilities.

All applications to subtopics under this topic must:

- Clearly provide understanding of current capabilities and outline the novelty of the proposed solution.
- Propose a tightly structured project which includes technical and business milestones that demonstrate clear progress, are aggressive but achievable, and are quantitative;
- Demonstrate a clear understanding of the OT process/system that is being protected and how the solution will protect without interrupting reliability and normal operations;

Anatomy of a Topic

- The Office releasing the topic is in the box
  There are hyperlinks in the Office description which provides background information

The topics are in bold – in this case C56-01.
The content in the blue box it indicates that they are accepting only SBIR applications

- DOE refers to proposals as applications, as you will be submitting an application package

The amount of the Phase I award is noted - $200K
The topic description specifies what all subtopics MUST do

- Don't ignore the Topic description

- Clearly describe the commercialization potential of the federally-funded effort and provide a detailed path to scale up in potential transition to industry practice.
- Fully justify the future potential for demonstration with an asset owner/operator who is an intended user.

All applications to subtopics under this topic should:

- Prioritize the reduction of catastrophic cyber risk and measures that enhance strategic stability for the nation's energy infrastructure.
- Emphasize technologies that ensure safe, clean, and reliable access to critical functions and safety information systems without obstructing normal operations.
- Clearly define the merit of the proposed innovation compared to competing approaches and the anticipated outcome.
- Be consistent with and have performance metrics (whenever possible) linked to published, authoritative analyses in your technology space.
- Include quantitative projections for price and/or performance improvement that are tied to representative values included in authoritative publications or in comparison to existing products.
- Fully justify all performance claims with thoughtful theoretical predictions and/or experimental data.

Grant applications are sought in the following subtopics:

a. Distributed Energy Resource (DER) Cyber Protection

This subtopic is for the development of capabilities such as tools, techniques, and/or methodologies that address gaps related to **infrastructure/software architecture for securing DERs.** Solutions need to take into consideration reliability requirements and the custom engineered nature of most OT systems. Proposed solutions can include but are not limited to sandbox environments to exercise scenarios, automated and unique cyber guidance development for acquisitions, and solutions that promote self-healing from intrusion or malicious attacks.

Questions – Contact: Joseph Dygert, Joseph.dygert@netl.doe.gov

b. Other

In addition to the specific subtopics listed above, the Department invites grant applications in other areas that fall within the scope of the topic description above.

Questions – Contact: Joseph Dygert, Joseph.dygert@netl.doe.gov

References:

1. American Petroleum Institute, 2014, State of Operational Technology Cybersecurity in the Oil and Natural Gas Industry, *American Petroleum Institute, April 2014.* p. 82, www.api.org/~/media/Files/Policy/Cybersecurity/Operational-Technologies-Guidance-Doc-Apr14.pdf (October 26, 2022)
2. Locasto, M., Balenson, D., 2019, A Comparative Analysis Approach for Deriving Failure Scenarios in the Natural Gas Distribution Infrastructure, *In: Staggs J., Shenoi S. (eds) Critical Infrastructure Protection XIII. ICCIP 2019. IFIP Advances in Information and Communication Technology, vol 570. Springer, Cham,* https://link.springer.com/chapter/10.1007/978-3-030-34647-8_2 (October 26, 2022)
3. United States Department of Commerce, 2021, NTIA Software Component Transparency, *National Telecommunications and Information Administration, United States Department of Commerce,* https://www.ntia.doc.gov/SoftwareTransparency (October 26, 2022)

Continued from previous page

Anatomy of a Topic

There are more guidelines at the top of this page that relate to the topics' requirements

There are two subtopics on this page

- A letter is used to designate each subtopic. In this case – a and b.

There is a contact to whom you can direct questions

- Best to ask questions as early as possible, because of the holiday season
- Always ask questions about "Other" topics
- The person listed is the Topic Manager

The references are there for a purpose

- Be sure to review them

Should I talk to the Topic Manager?

- If you have questions, you should ask them as soon as possible
  - Send an email in advance and ask to schedule a call
  - Review all the Topic and subtopic information carefully before you have the call
  - The purpose of the call is to seek clarification on questions you have regarding the information provided – so that YOU, and **NOT** the topic author can decide if you can submit a responsive application
  - Listen to webinar recordings

Sample email to Topic Manager

Dear **[Insert Topic Manager Name]**

By way of introduction my name is **[insert name]** and I am **[describe affiliation].** I have reviewed the current Funding Opportunity Announcement [FOA] and am interested in Topic#, Subtopic Y. After reviewing the topic and subtopic carefully, as well as the links and references, I have a few lingering questions that I would like to discuss with you. Would you have time in the next couple of days for a brief, 10-15 minutes phone call? A brief conversation with you will help me determine if I can submit a responsive proposal. Please recommend a time when I may call you.

My questions relate to: [insert 1 or 2 of your key questions – the following is an example - *technology approaches - are there certain approaches which are of no interest to DOE? what are the performance expectations in Phase I as opposed to Phase II?*]

Thanks for your consideration of my request.

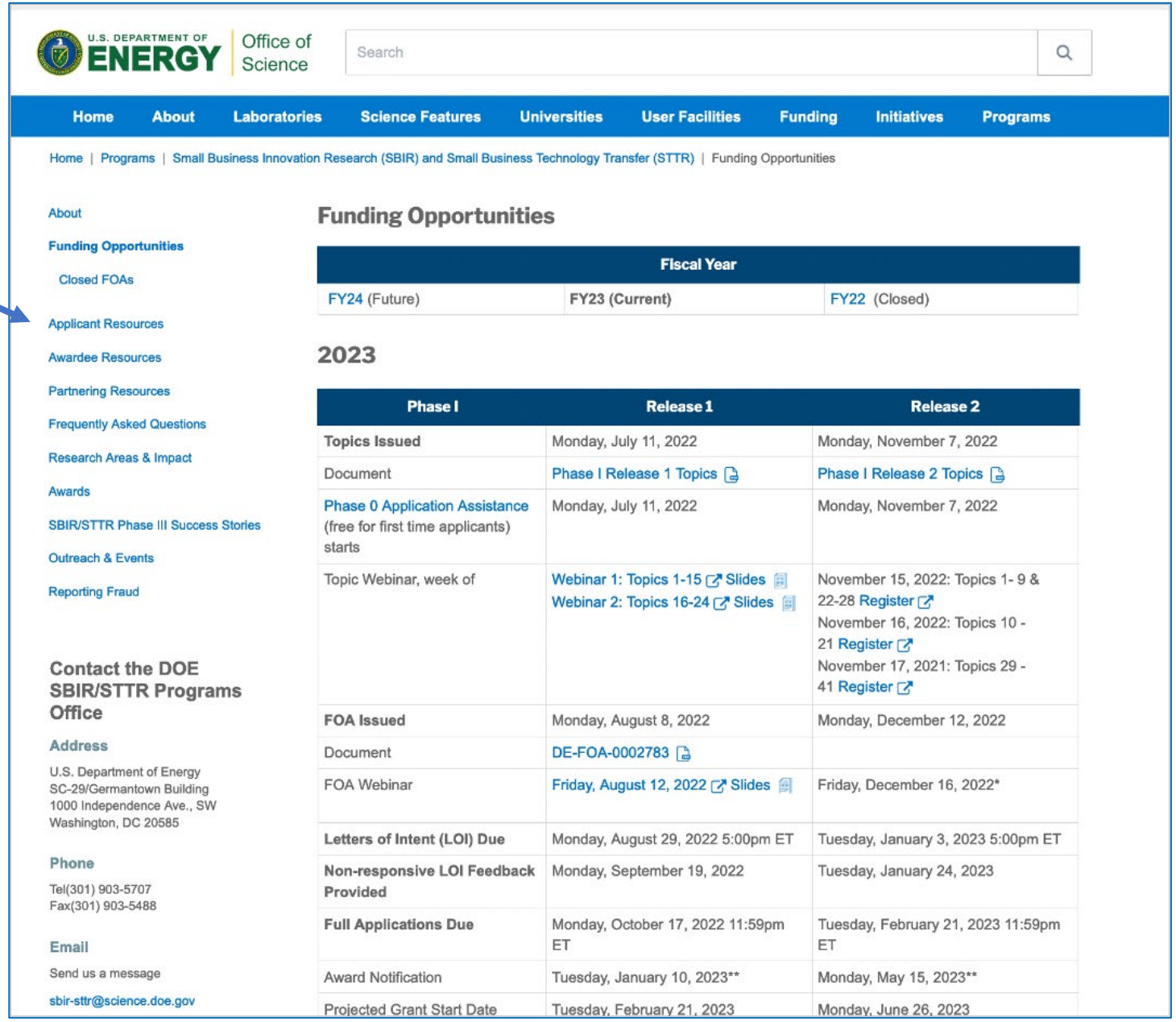

IMPORTANT DATES

Important Dates

- Dates topics are released (11/7/22)
- Topic webinar dates (11/15-11/17)
  - You need to register in advance
  - You can listen to recordings
- Funding Opportunity Announcement (FOA release (12/12/22)
- Letter of Intent Due (1/3/23)
- Non-responsive feedback (1/24/23)
- Full Applications due (2/21/23)

Letter of Intent (LOI) Instructions

An essential gate!



Finding Instructions!

Always go to Applicant Resources

Why does DOE have a Letter of Intent (LOI)

- Congress has asked agencies participating in the SBIR/STTR programs to announce their awards within 90 days of application submission deadlines
- To do this, DOE selects reviewers early.
- The LOI enables them to do this

What happens if I get a non-responsive notice from DOE?

- **You can still submit an application if you receive a non-responsive letter from DOE**
  - DOE only sends an email to those whose LOIs are non-responsive
  - You can only submit an application based on the LOIs that you submit.
  - You cannot just change topics/subtopics
  - You can submit multiple LOIs
- **Recommendation**
  - Work hard to prepare an excellent LOI, view this as the beginning of your proposal preparation process.

Funding Opportunity Announcement (FOA)

Should I wait until the FOA is released on 12/12/22 before I start working on my application?

START NOW!

- The worst thing you can do is to wait for the FOA to be released before you do anything!

  - Review the topics document now!
  - As you read the topics/subtopics – LISTEN to what the topic manager is saying that they want.
  - Is there synergy between your skills and DOE's needs
  - Do you understand the state of the art?

  - View working on the LOI as starting to work on your proposal

Registrations

Three registrations that all SBIR/STTR require

- Unique Entity Identifier (replaces D&B)
  - https://sam.gov/content/duns-uei
- System for Awards Management (SAM)
  - https://sam.gov/content/home
- SBIR company registration with SBA
  - https://www.sbir.gov/registration

Each agency may have additional systems with which you must register, but these three all participating agencies require.

DOE does have MORE registrations – PAMS is the first one you will use

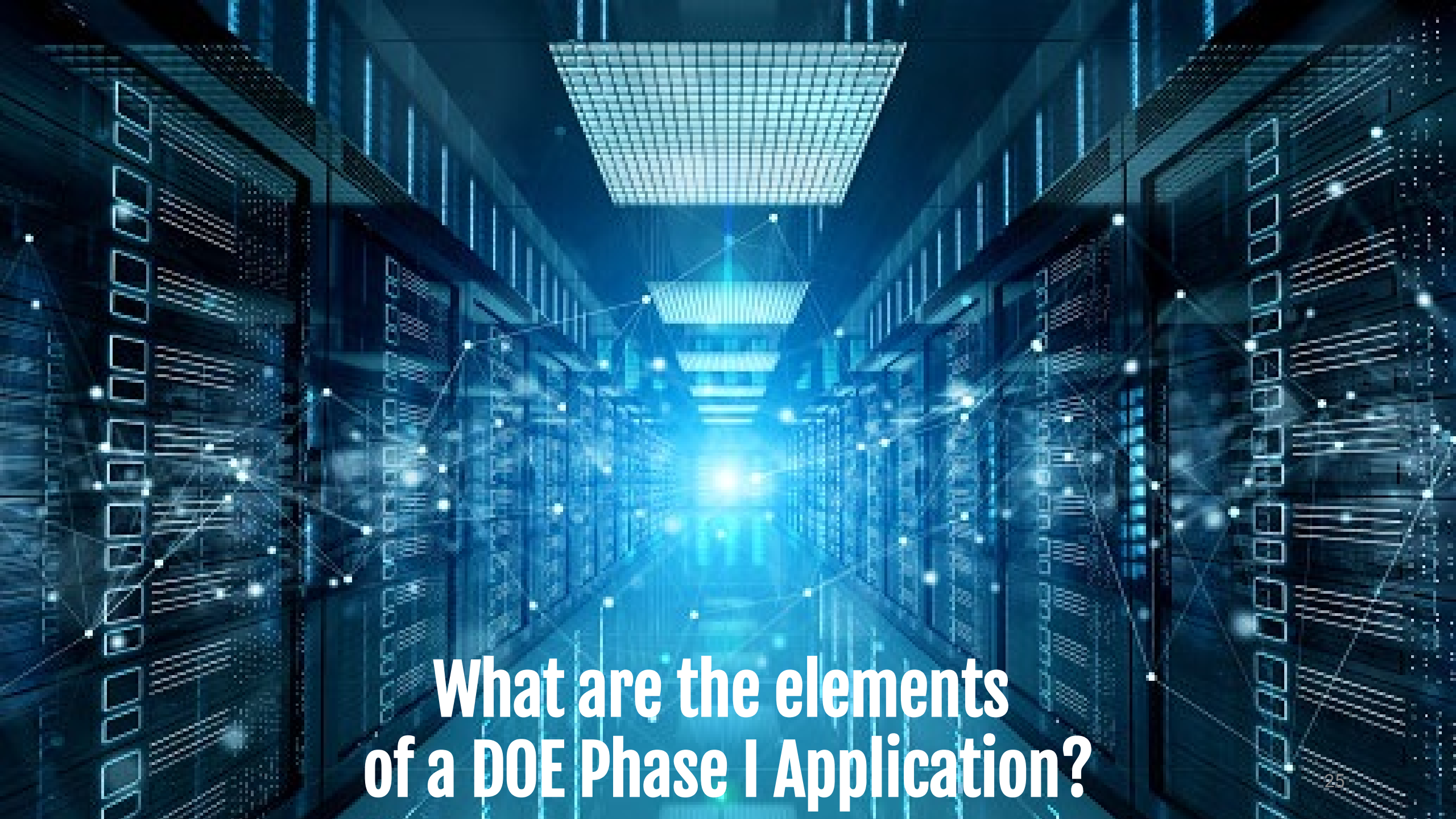
SAM registration

- If you are planning to apply for a federal grant or contract, complete this at any time
- This process is currently taking two-to- three months to clear
- **To minimize delays in the registration process**:
  - Always use the same company name and address (no variations)
  - Make sure that this is the same information that you use with IRS
  - Keep copies of your SAM password and UEI handy
  - Check trash for CAGE code – still currently coming from DLA (Defense Logistics Agency)
  - Work with a local Procurement Technical Assistance Center (PTAC)
    - https://www.aptac-us.org/find-a-ptac/?state=PR

Implications

- Some companies that start their SAM registration as soon as they start working on their proposal, have not received information in time to submit their proposal

You can’t submit a responsive proposal, If you are not registered with SAM



What are the elements of a DOE Phase I Application?

What is the structure of DOE Phase I application package?

- **In order to apply for a DOE SBIR/STTR award you need to :**

  - First submit a **Letter of Intent** (LOI) through the system called Portfolio Analysis and Management System (**PAMS**)
  - Prepare a research proposal (called a **"Project Narrative"**)
  - and a **Commercialization Plan**
  - with an accompanying **budget** and
  - **Resumes** (biographical sketches) of those who will do the work
  - A **public abstract**
  - A variety of forms and attachments
  - Register with the **System for Awards Management (SAM)**
  - Submit the application through a system called **Grants.gov**

The Project narrative is the heart of the proposal

Cover Page

Proprietary Data Legend

1.0 Identification and Significance of the Problem or Opportunity, and Technical Approach

2.0 Anticipated Public Benefits

3.0 Technical Objectives

4.0 Work Plan

5.0 Performance Schedule

6.0 Facilities/Equipment

7.0 Research Institution

8.0 Other Consultants and Subcontractors

9.0 Bibliography and References Cited

Work on the LOI and project narrative concurrently

This will save you time

First two sections of Project Narrative

From previous FOA

- **Identification and Significance of the Problem or Opportunity, and Technical Approach** – Define the specific technical problem or opportunity addressed by your application. Provide enough background information so that the importance of the problem/opportunity is clear. Indicate the overall technical approach to the problem/opportunity and the part that the proposed research plays in providing needed results.

- **Anticipated Public Benefits –** Discuss the technical, economic, social, and other benefits to the public as a whole anticipated if the project is successful and is carried over into Phases II and III. Identify specific groups in the commercial sector as well as the Federal Government that would benefit from the projected results. Describe the resultant product or process, the likelihood that it could lead to a marketable product, and the significance of the market.

LOI Guidelines

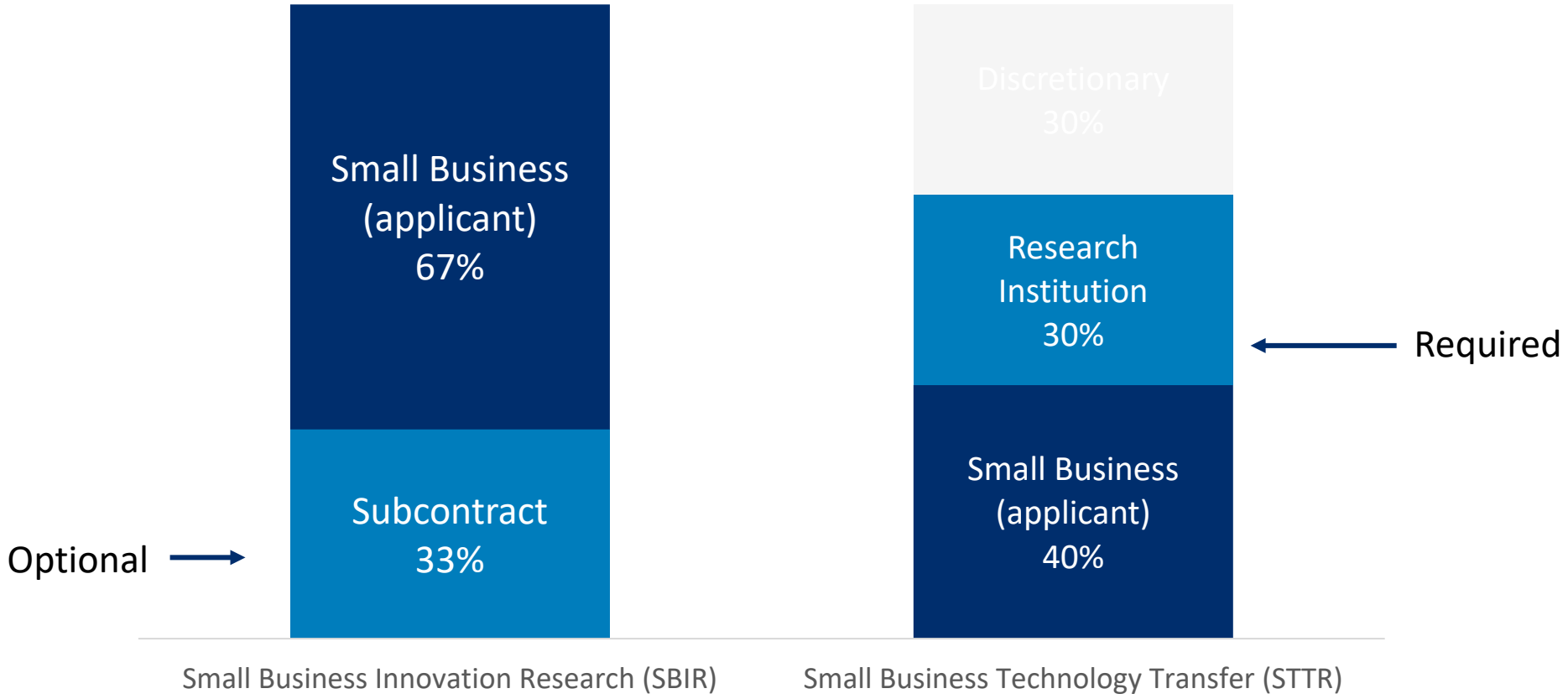
- A Technical Abstract in .PDF format must be uploaded to PAMS, must not exceed 500 words and two pages, and it **must provide sufficient technical description of the proposed technology and application to allow DOE to assign technical reviewers to the full grant proposal**. The technical abstract may include photos and/or tables, and captions are not included in word count. **However, please note that a technical abstract must not contain any proprietary information."**

- **Download sample LOI from DOE Application Resources**

How big is the proposal / application?

Item	Project Narrative	Commercialization Plan	Budget justification	Biographical sketches	Project Abstract
Page numbers	7,500 words	4 pages	Not specified	Use form	1 page
Other	Follow guidelines in DOE Funding Opportunity Announcement (FOA)	Follow Guidelines Under Applicant Resources	Stay within budget. Use Budget Justification form	Follow guidelines in *Instructions for Completing a DOE SBIR/STTR Phase I Grant Application*	PDF format
					No proprietary info

What's the difference between SBIR and STTR?



The small business is ALWAYS the applicant and awardee!

Administrative Review Process

Administrative Review Process

- Every agency conducts an Administrative review first
- If the proposal does not pass the Administrative review step, it will not go though Scientific/Technical review and will be declined
- Common reasons for NOT passing the administrative review include:
  - The proposed budget is higher than what the agency allows in Phase I
  - Some of the required forms were NOT included
  - The company did not adhere to the page count, margins, etc.
  - The proposal was not for research and development
  - The proposal was submitted after the deadline

How to pass Administrative Review?

When you review an agency solicitation,

- Read the **application guidelines** very carefully
- Prepare a PPT to share with others who are assisting you and include
  - The due date a time
  - Any guidelines regarding page limits, font type and size, margins, markings
  - Budget for Phase I awards
  - Evaluation criteria
  - See if a checklist is included in the solicitation
  - Determine through which system the SBIR/STTR application must be delivered
  - Generate a list of all forms that must be completed
  - Note any additional registrations, besides the three mentioned earlier
  - Note any initial steps that affect your ability to submit an application, later

Agency Evaluation Criteria

Write **to** the evaluation criteria!

Technical Plan – the Heart of the Proposal

- Every solicitation requires that you draft a technical plan, which may be called different things depending on the agency. For example
  - Project Narrative (DOE, USDA)
  - Technical Volume (DoD, NASA)
  - Project Description (NSF)
  - Research Plan (NIH)
- This section is the heart of the proposal and the key part that reviewers will evaluate. Be sure that you review the evaluation criteria, presented in the solicitation, before you start drafting this section.

Follow the Outline Precisely

- The sections that an agency wants to see in the technical plan, are unique to that agency
- The agency provides an outline in the Phase I solicitation
- Follow the outline precisely
- This makes it easy for reviewers to find information they need to evaluate
- Build this document in stages and secure feedback as you develop
- Gradually winnow down to the page length to that specified

All solicitations include evaluation criteria

DOE Evaluation Criteria

2. Merit Review Criteria

DOE plans to make selections for Phase I awards from those applications judged to have the highest overall merit within their technical program area, with equal consideration given to each of the following criteria:

Strength of the Scientific/Technical Approach as evidenced by
(1) the innovativeness of the idea and the approach,
(2) the significance of the scientific or technical challenge, and
(3) the thoroughness of the presentation.

Ability to competently carry out the project as evidenced by
(1) the qualifications of the PI, other key staff, subcontractors and consultants, if any, and the level of adequacy of equipment and facilities;
(2) the soundness and level of adequacy of the work plan to show progress toward proving the feasibility of the concept; and
(3) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.

Impact as evidenced by
(1) the significance of the technical and/or economic benefits of the proposed work, if successful,
(2) the likelihood that the proposed work could lead to a marketable product or process,
(3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends, and
(4) the appropriateness of the data management plan for the proposed work.

Please refer to Section VIII, A. of this FOA for guidance on what to include in your Commercialization Plan and Commercialization History.

How do I keep this simple!?

- **Understand what is the most important**
  - The Project Narrative
  - Evaluation criteria: Innovation, Team, Facilities
- **Know where and when to get help**!
  - For those in the Phase 0 program – we will help you
  - For others – reach out to your local Small Business Development Center and/or Procurement Technical Assistance Center
  - Listen to the Tutorials on DOE Phase 0 website
    - Podcasts and PDFs

Upcoming Webinars from Dawnbreaker

- The importance of Developing a Proposal Preparation Schedule
  - Tuesday, November 22, 1:00 EDT

- Do you Really Understand the Topic?
  - Tuesday, November 29, 2:00 EDT

Thank you for joining me today!

Jenny C. Servo, Ph.D.
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