Webinar 02/23/2023

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Q&A for 2023 Call

INFUSE Web Site

https://infuse.ornl.gov/

INFUSE Overview

The objective of INFUSE is to provide private-sector fusion companies access to the expertise and facilities of DOE's national laboratories and (since FY2022) U.S. academic institutions to overcome critical scientific and technological hurdles in pursuing development of fusion energy.

AWARDS

- **72** projects funded to date with a total value of **$14.5M**
- Awards were made to **21** private companies partnering with **10** DOE labs and **8** U.S. Universities.
- Detailed list: https://infuse.ornl.gov/wp-content/uploads/2023/01/Cumulative_AwardList_wAbstracts_thru2022b.pdf
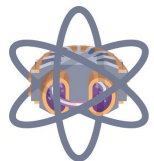
PARTICIPATING LABORATORIES

AWARDED TOPICAL AREAS
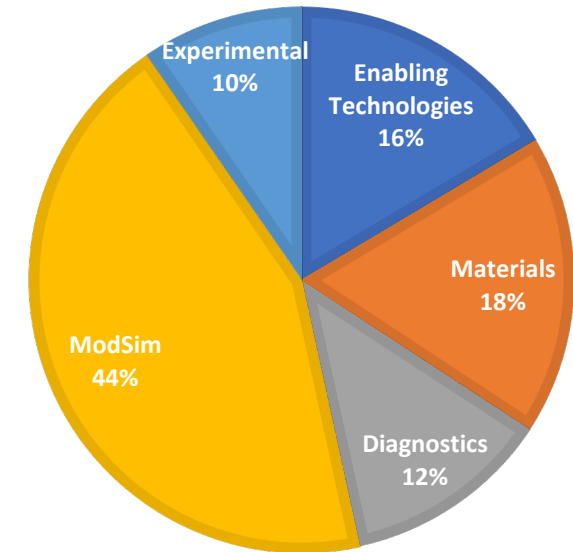
TOPICAL AREAS

1) Enabling Technologies
2) Materials Science
3) Plasma Diagnostics
4) Modeling and Simulation
5) Unique Fusion Experimental Capabilities
6) Paths to Commercialization

What is Changing for FY2023?

1. **Increase in ceiling of award request**

2. **Inclusion of Universities**

3. **Topic area addition and modification**
    — "Activities to support eventual fusion commercialization" abbreviated as "Paths to commercialization" on web site
    — "Modeling and simulation" expanded definition

4. **Changes in review criteria**
    — Scientific and/or technical merit criteria modified
    — PIER plan criteria added

5. **First round will be the primary (perhaps only) round for applications in 2023**
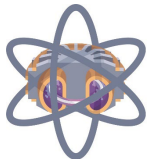
Eligibility Requirements

- **Eligible Applicants:** Private companies incorporated in the United States (can be a foreign owned subsidiary – PI and all cost-share must come from US subsidiary).

- **Eligible Partner Institutions:** Any DOE national laboratory or institution of higher education with unique capability that is not available in the private sector. Partners must agree to work (record of discussion).

- **Award size:** $100K to $350k with a 20% cost share requirement, 12 months in duration. Requests up to $750k and up to 24 months will be considered for work deemed to be of critical value to the company.

- **Number of Allowable Applications:** 5 per company per RFA call.

- **Company Certifications:** (1) Cost-share certification and (2) IP Certification (CRADA or IP Management Plan).

For further details, consult the RFA Call:

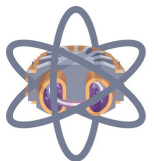https://infuse.ornl.gov/wp-content/uploads/2023/02/FY2023-INFUSE-RFA_FINAL.pdf

For eligibility requirements:

https://infuse.ornl.gov/rfa-requirements/

For additional RFA information and downloadable resources:

https://infuse.ornl.gov/rfa-announcement-and-submission/

INFUSE Process – Inclusion of Universities

Preparation Phase
- Identify priority R&D
- Identify partner institution
- Agree upon work scope (Record of Discussion)

Application Phase
- Technical narrative
- Budget and cost-share
- Supporting Documents
- Lab Only: CRADA certification (does not need to be executed for application)
- University Only: Establish Intellectual Property Management Plan (IPMP) and IPMP certification

Award Phase
- Award notification
- Lab Only: Lab submits Field Work Proposal (FWP) and receives funding
- Lab Only: Establish standardized CRADA
- University Only: University submits proposal to SC Open Notice
- University Only: DOE awards funding via grant/cooperative agreement
- Begin work

Private Industry

RFA submission

IPMP

CRADA

DOE-INFUSE

Grant/Cooperative Agreement

M&O Contract/FWP

U.S. Universities

DOE Laboratories

Inclusion of Universities

- **Intellectual Property Management Plan (IPMP)**

  - The IPMP is required as a part of the submission package for university partners.
  - This is an agreement between the company and the institute of higher education.
  - INFUSE has no template for the plan or requirement on its format.

- **The INFUSE "Library" page has a University Contact List**

  - https://infuse.ornl.gov/library/
  - The current list was posted a year ago.
  - This will be updated as we continue to identify possible partners for relevant work.
  - The University Fusion Association could be a resource in identifying universities that have faculty performing research in this area:
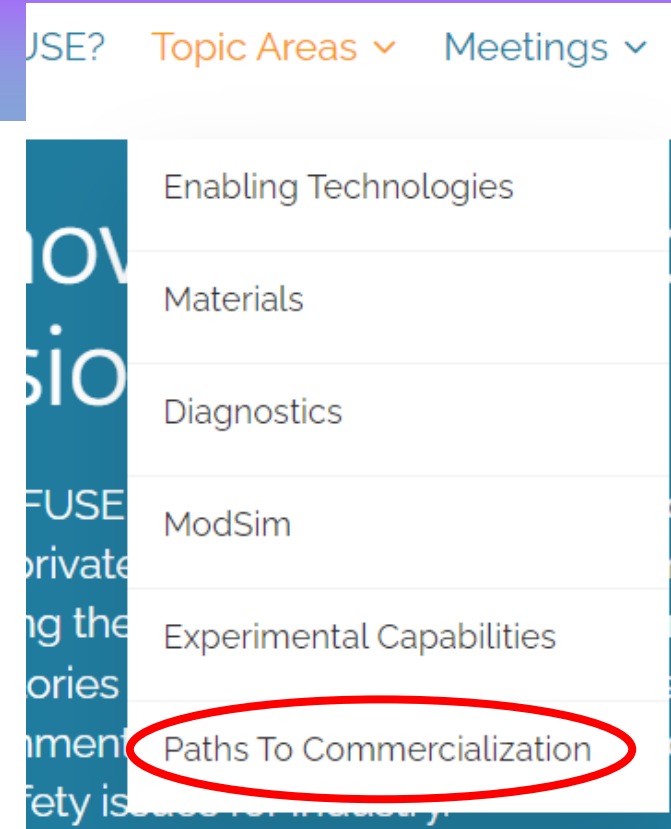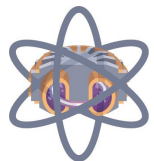   https://sites.google.com/site/universityfusionassociation/home?authuser=0
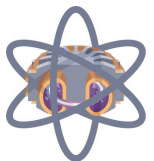
Topic Area Modification

- **Activities to support eventual fusion commercialization ("Paths to Commercialization")**

  — This topic was added in view of the maturation of the private fusion industry.

  — This would include but not be limited to:
    - Accident and safety analysis in support of eventual licensing
    - Public engagement, including energy and environmental justice
    - Fuel supplies
    - Advanced manufacturing
    - Waste disposition and recycling

- **Expansion of "Modeling and Simulation"**

  — This would include but not be limited to:
    - Physics, engineering and/or materials modeling/simulation
    - Plant costing (e.g., models focused on cost to build a fusion plant and cost drivers for a fusion plant or essential subcomponents/systems, such as tritium processing)
    - Technoeconomic modeling focused on cost-of-electricity or other products (e.g., process heat) for fusion plants

USE? Topic Areas ⌄ Meetings ⌄

Enabling Technologies

Materials

Diagnostics

ModSim

Experimental Capabilities

Paths To Commercialization

Changes in Review Criteria (1)

- **Review criteria from past RFAs**

  1. SCIENTIFIC AND/OR TECHNICAL MERIT OF THE PROPOSED RESEARCH
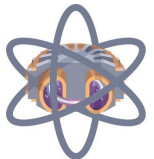   - Has the applicant clearly identified a problem or challenge faced by the company that can be overcome by assistance from host DOE national laboratory?
     - What is the likelihood of achieving valuable results?
     - Does the proposed research have the potential to accelerate progress toward the development of fusion energy?
  2. APPROPRIATENESS OF THE PROPOSED METHOD OR APPROACH
     - Is the applicant's approach realistic and feasible with respect to scientific and technical considerations?
     - Is the applicant's approach appropriately aligned with the host institution's capabilities?
     - Does the applicant recognize significant potential problems and consider alternative strategies?
  3. COMPETENCY OF APPLICANT'S PERSONNEL AND ADEQUACY OF PROPOSED RESOURCES
     - What is the past performance and potential of the company and host institution Principal Investigators (PI)?
     - How well qualified is the research team at the host institution to carry out the proposed research?
     - Are the research environment and facilities available to the designated host institution adequate for performing the research?
     - Does the proposed work take advantage of unique facilities and capabilities of the host institution?
  4. REASONABLENESS AND APPROPRIATENESS OF THE PROPOSED BUDGET
     - Are the proposed budget and staffing levels adequate to carry out the proposed research?
   - Is the budget reasonable and appropriate for the scope?
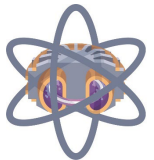
Changes in Review Criteria (2)

- **Scientific and/or technical merit of the proposed research**
  - Change:
    - Removed "Does the proposed research have the potential to accelerate progress toward the development of fusion energy?"
    - Added "Is there a company milestone, technology maturation, or follow-on funding towards the development of fusion energy that will result from successful achievement of this work?"
  - The INFUSE program is going to be highlighting metrics and stories of success.

- **Additional merit review criteria (PIER plan)**
  - A fifth review criteria has been added to the original four.
  - The addition was made following a requirement of the Office of Science.
  - Applicants will add this in Appendix 2 of the application (not within 10 page limit).
  - Go to https://science.osti.gov/grants/Applicant-and-Awardee-Resources/PIER-Plans/Information-about-PIER-Plans for more information.

Changes in Review Criteria (3)

- **The new merit review criteria (as included in the FY2023 RFA):**
  - Quality and efficacy of the promoting inclusive and equitable research plan
    - Is the proposed Promoting Inclusive and Equitable Research (PIER) Plan suitable for the size and complexity of the proposed project and an integral component of the proposed project?
    - To what extent is the PIER Plan likely to lead to participation of individuals from diverse backgrounds, including individuals historically underrepresented in the research community?
    - What aspects of the PIER Plan are likely to contribute to the goal of creating and maintaining an equitable, inclusive, encouraging, and professional training and research environment and supporting a sense of belonging among project personnel?
    - How does the proposed Plan include intentional mentorship and are the associated mentoring resources reasonable and appropriate?

- **Notes on the PIER Plan evaluation**
  - The language of the review criteria is provided by the Office of Science.
  - The plan should be written from the perspective of the company (not the lab or university). It is understood to be the view of the organization, not the individual PI.
  - The size of the project, and the size and maturity of the company will be taken into account in the review.
  - INFUSE awards are not intended to be used as a mechanism for workforce development.
  - The PIER Plan is expected to be a <u>plan</u>, not a census.
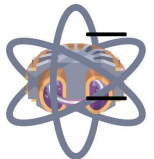
FY 2023 Schedule

- Feb. 16   RFA posted
- Feb. 23 (noon EDT)   Webinar
- Feb. 27   Web site open for submissions
- Mar. 31 (noon EDT)   RFA closes – **this is a firm deadline**
- Apr. 13 (noon EDT)   INFUSE Town Hall Meeting (virtual)
- Mid-July   Award Announcement
- Sep. 1   Work Start Date
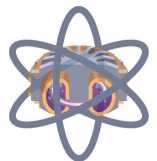
Upcoming INFUSE Townhall

The INFUSE leadership team would like to hold periodic virtual Townhall meetings to discuss various issues around the program, to give information and get feedback.

The first Townhall will be held on April 13 at noon EST. The following will be topics for discussion:

- The annual workshop – where, when, what, and how?

- Given the constraints of the INFUSE program, how could it be a more effective agent for diversity in the fusion energy community?

- What should the agenda be for the next Townhall?
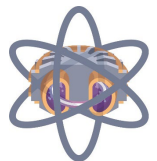
INFUSE Website – Library

https://infuse.ornl.gov/

The INFUSE Documents/Reports Library (https://infuse.ornl.gov/library/) has many documents and historical information on the program:
- These slides
- Point of Contact information
- Frequently Asked Questions (FAQs)
- Previous award summaries
- Prior year webinar slides
- And more . . .

INFUSE Website – RFA and Submission Information

The INFUSE Submission page (https://infuse.ornl.gov/rfa-announcement-and-submission/) has many downloadable resources:

- The INFUSE RFA Call
- Standard CRADAs
- Submission Rules
- Etc . . .

It is also the place to start the submission process (more on this in a minute).
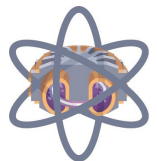
FY 2023 Submission Tips

A few tips on proposal submission:

- You will need to go through the vetting process to get access to the submission site (see following slides). The application cannot be started until February 27, but vetting can begin now.

- Make sure to give sufficient detail outlining the cost share split between private / national lab partners.

- You are encouraged to use [ARPA-E Capability Teams](#).

- Also see "Tips on writing a successful proposal" document under "Downloadable Resources" on submission page (http://infuse.ornl.gov/wp-content/uploads/2020/02/INFUSEhints.pdf) or the "FAQs" page in the library.
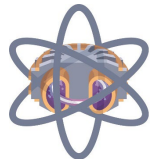
Access to Submission Site (currently open)

ORNL has a security procedure for guest access. If you are planning on submitting an RFA, please fill in your information below. You will be contacted with further instructions. Even if you have a vetted account and password from a previous cycle, you will still need to fill out this form to gain access to the submission site for this round. (NOTE: If you have been vetted before and you enter a different email below, then you will need to be vetted again). Anyone needing access to the site should complete this form, whether a company Point of Contact or company Principal Investigator. Once your receive confirmation, you may log into the protected SharePoint site here to begin your submission.

Guest Access

* Required

1. Name *

[Enter your answer]

2. Primary Email *

[Enter your answer]

3. Alternate Email *

[Enter your answer]

https://infuse.ornl.gov/rfa-announcement-and-submission/
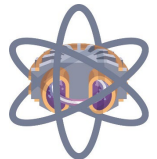
- You may begin the submission process now.
- This is the first step of the "vetting" process to gain access to the RFA application site.

INFUSE questions: infuse@ornl.gov
Arnie: lumsdainea@ornl.gov
Walter: wgutten@pppl.gov

Submission – Vetting Process for Guest Access

To request guest access for submitting an RFA Application, please visit https://infuse.ornl.gov/rfa-announcement-and-submission/ and fill out the form under "Access to Submission Site" at the bottom of the page.

An automated process will check if you have already been vetted and your email is in our system.

If you are in our system, you will receive an invitation to the RFA Application site along with log in instructions. ***Note that if you have changed software (i.e. reinstalled Authenticator) or hardware (i.e. new cell phone) you will need to email*** infuse@ornl.gov ***in order to reset your MFA.***

If you are not in our system, you will receive the email below:

Greetings,

Please use this link to schedule a time when you are available to be vetted for guest access to ORNL's SharePoint sites.

You will need the following:
1. Access to a web camera
2. Driver's license or Passport
*3. A system with Google Chrome (for the Teams web version) or the Teams client installed.*

The link will take you to a bookings page https://outlook.office365.com/owa/calendar/ExternalGuestScheduling@ornl.onmicrosoft.com/bookings/ which will allow you to select the date/time when you can join a Teams meeting.

When the external user selects the date/time they can meet, a Teams meeting gets created for both them and with one of our team members.

At the Teams meeting, both you and our team member will turn on their cameras. You will verify your identity by showing our team member your driver's license or passport. No information or images are recorded.

They will also walk you through any additional steps that may be needed.

Once you have been vetted, you will receive an email invitation to the RFA Application site along with log in instructions.
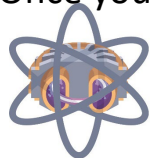
Submission Notes

A few notes on proposal submission:

- You may make any changes to your application while it is in "Draft".

- When you change to "Submit" and press save:
  - You will be notified if any required fields are not completed.
  - You will be sent a confirmation email including a PDF or your submission.

- You can continue to modify your application until March 31 at noon (EST)

You may submit once required fields are completed. *

◉ Draft   ○ Submit

Important! Submitted applications can continue to be modified until the application close date. No applications are reviewed until that time. After submitting, you will receive a PDF copy of the form for additional review (allow 5 minutes).

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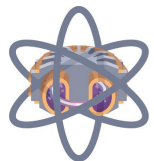
Save   Cancel

Official Points-of-Contact

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Pacific Northwest National Laboratory (PNNL) Wahyu Setyawan wahyu.setyawan@pnnl.gov

Princeton Plasma Physics Laboratory (PPPL) Walter Guttenfelder wgutten@pppl.gov

Sandia National Laboratories (SNL) Rob Kolasinski rkolasi@sandia.gov
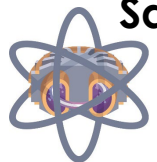
Savannah River National Laboratory (SRNL) James Klein james.klein@srnl.doe.gov

https://infuse.ornl.gov/national-lab-capabilities/