Rapid Turnaround Experiments (RTEs)
FY 2024 2nd Call for Proposals

February 6, 2024

U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

NSUF Nuclear Science User Facilities

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What are Rapid Turnaround Experiments (RTEs)?

- **Mission**
  - To facilitate the advancement of nuclear science and technology by providing researchers with access to world-class capabilities at no cost to the researcher
    - Irradiation testing
    - Post irradiation examination
    - Idaho National Laboratory (INL) high performance computing
    - Technical and scientific assistance for the design and execution of projects
- **Objective**
  - Offer an avenue for researchers to perform irradiation effects studies of limited scope on nuclear fuels and materials utilizing Nuclear Science User Facilities (NSUF)
  - Access to NSUF capabilities is granted through competitive RTE and CINR proposal processes
- **Limitation**
  - RTE calls opened 3 times per year
  - 9-month project duration

Research Areas of Interest

- Directly support Office of Nuclear Energy (NE) research and development (R&D) programs
  - Light Water Reactor Sustainability Program, Fuel Cycle R&D, Advanced Modeling and Simulation, Next Generation Nuclear Program, and the Generation IV Nuclear Energy Systems Initiative (https://www.energy.gov/ne/office-nuclear-energy)
- Perform quick analysis of a small number of irradiated or radioactive materials or nuclear fuels research, including *in situ* sensor performance characterization
  - Neutron, charged particle, actinide, nuclear fuel

Facility Guidelines for RTE Experiments

- Guidelines are designed to help researchers develop a proposal that can be executed within the RTE schedule and budget.
  - Irradiation *and* PIE should assume approximately one week of access time at the irradiation facility and one week at the PIE facility
  - Neutron irradiation experiments that require the use of ATR, TREAT, HFIR or MITR in core positions do not qualify
- **PIs should work with each facility representative, prior to proposal submission, to ensure proposed work (scope, number of specimens, cost, etc.) can be accomplished within the RTE guidelines for that facility, and** the project scope can be completed within 9 months from award

Rules for Proposal Submission

- **Content**
  - Must be original, no duplication of other funded work
  - Produced data will lead to a scientific or engineering outcome that are suitable for publication and will be attributed to the NSUF
  - Must focus on irradiated or radioactive materials or nuclear fuels research, including in situ sensor performance characterization
    - Proposals can include limited non-irradiated structural or cladding reference samples, as appropriate
- **Facility**
  - Use NSUF capabilities at **up to three partner institutions**
    - One partner institution for sample preparation/shipping; One for irradiation; One for PIE
    - Requesting *only* sample preparation and/or sample shipment is not allowed
    - Proposals that request irradiation and PIE should remain within the suggested RTE guidelines
- **Funding**
  - Only support activities at, and shipping between, NSUF facilities
  - No funding to the PI to support salaries, tuition, travel, or other costs typically supported via NE Program R&D funds
  - Awarded RTEs must be completed no more than 9 months from the date of award

Rules for Proposal Submission (continued)
—If the PI has two open awards

- **Previous RTE Completion**
  - The PI must make all project data available to the research community
  - NSUF recommends using a Data Management and Sharing Plan (DMSP) by utilizing the Nuclear Research Data System (NRDS)
    - NRDS is a newly developed NSUF High Performance Computing data repository
    - NRDS will provide lifecycle storage of NSUF and NEUP project data
- **Completion Report Criteria**
  - Report should provide a summary of both the work completed and the data obtained
  - Describe the potential impact to the state-of-knowledge
- **Completion reports must be submitted within 4 months of any completed RTE project**
  - A project is considered active until a completion report is submitted and approved
  - A PI may have only TWO active RTE projects and a third proposal will not be allowed
    - If a PI has 2 active RTE projects, a completion report for one of the active projects must be submitted at least 2 weeks before the call closes to be eligible to submit an RTE proposal

Rules for Proposal Submission—Continue

- **PI Expectations:**
  - Only one PI per proposal
  - A PI may submit no more than one proposal per RTE call
  - A PI may have only two active RTE projects
  - Proposals from PIs not from a U.S. institution must include a collaborator who is from the U.S. and this collaborator must have a significant role in the experiment or project that supports the RTE
    - The roles and responsibilities for each U.S. collaborator must be clearly identified in the technical narrative
  - All proposals must include a technical narrative, curriculum vitae (or equivalent) for the PI and all team members
    - The technical narrative must not exceed **2** pages in length
  - Proposals must include all publications the PI and co-PIs have produced as a result of any and all previous NSUF funded experiments or projects (RTE and CINR)
  - Data generated from the work must be made available to the research community in a timely manner. The PI is responsible for the collection, management, and sharing of the research data through a data management plan (e.g., NRDS)
  - Acknowledgment of NSUF-funded research

Failure to meet any of the above rules will result in disqualification of the proposal

Minority Serving Institutions (MSI)

- Five points will be manually added to the average technical score and noted in the recommendation provided to the NSUF Federal Program Manager if the PI is from an institution listed in the United States Department of Education MSI directory

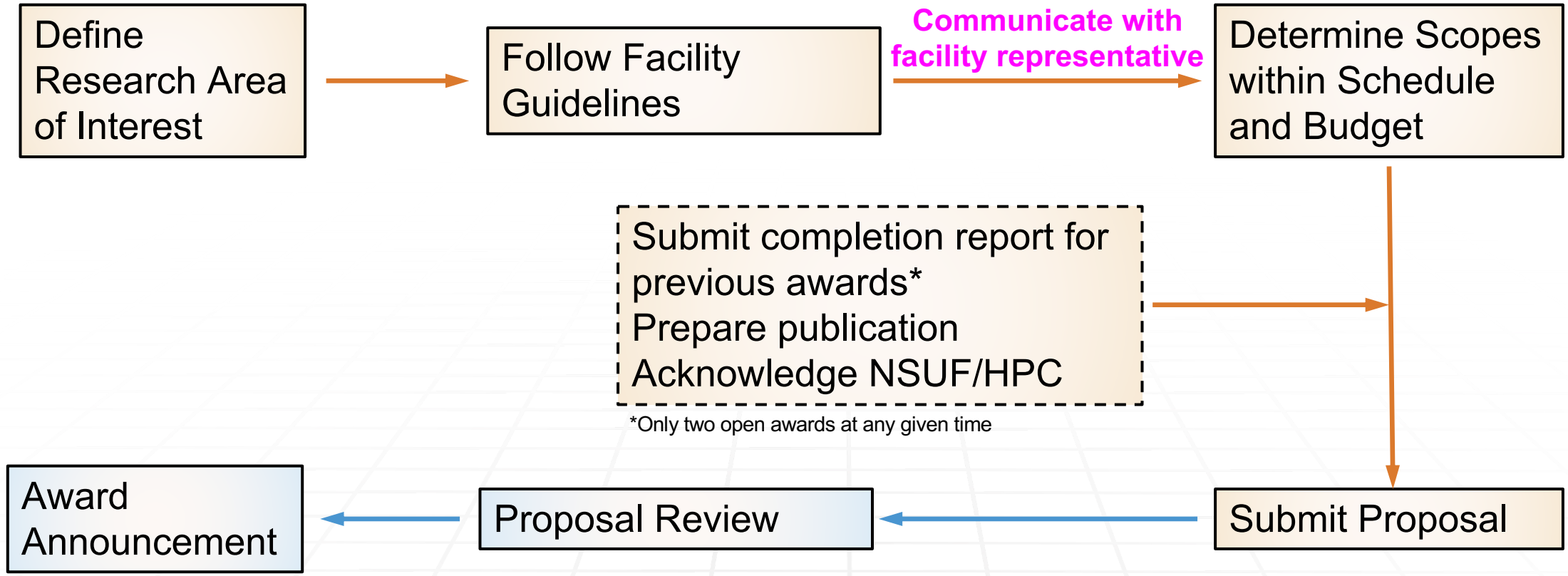
Acknowledging the NSUF

- NSUF projects: This work was supported by the U.S. Department of Energy, Office of Nuclear Energy under DOE Idaho Operations Office Contract DE-AC07- 05ID14517 as part of Nuclear Science User Facilities award #_____.
- HPC work: This research made use of Idaho National Laboratory's High Performance Computing systems located at the Collaborative Computing Center and supported by the Office of Nuclear Energy of the U.S. Department of Energy and the Nuclear Science User Facilities under Contract No. DE-AC07-05ID14517.

Review Process

- **Program relevance**
  - Support, advance, demonstrate recognizable ties to NE mission and relevant topics
  - Build on synergies with ongoing direct- or competitively-funded projects or meet a critical mission need
- **Feasibility**
  - Ensure proposed work (scope, number of specimens, etc.) can be accomplished within the RTE guidelines for that facility, and the projects can be completed within 9 months from award
- **Technical/Scientific merit**
  - Scientific merit (50%)
  - Technical feasibility (30%)
  - Capability of the team (20%)
- **Panel review**
  - Reviews technical comments and scores to ensure consistency across the reviews
  - Provides a ranked list to the NSUF Director
  - The NSUF Director makes the final award recommendation to NE
    - Balance the distribution of funds in a single call to impact a broad group of researchers
    - Decline proposals with very large budgets out of proportion to the guidelines
    - Restrict awards to applicants who have a poor record of completing awarded RTEs within the nine-month period and/or have a poor record of timely publication and/or acknowledgment of NSUF-funded research
    - Grant additional points to proposals with a PI from a minority serving institution (MSI)

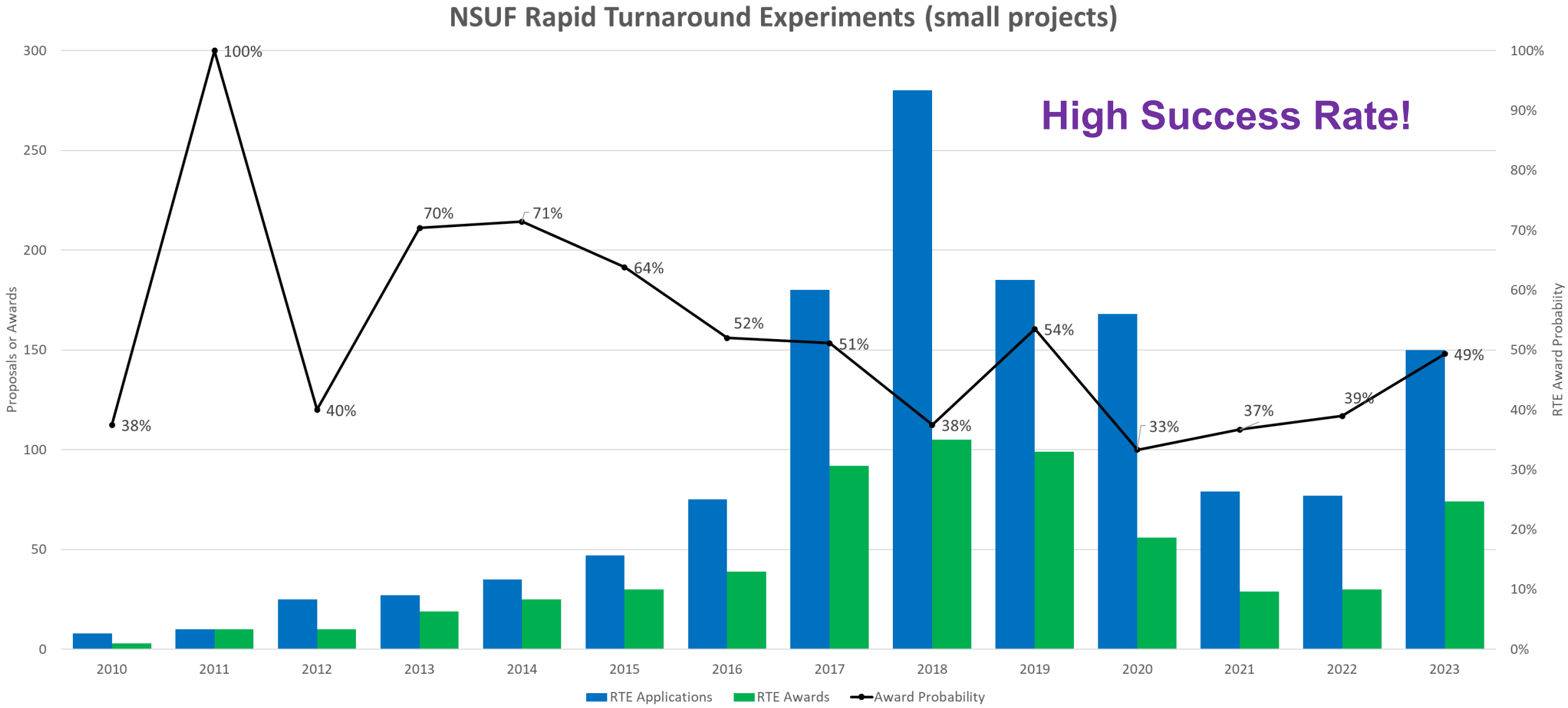
Summary of RTE Proposal Preparation and Review



Tips for Success

- Plan ahead
- Work with facility representative *before* submitting proposal
- Ensure sample readiness
- Request samples from the NSUF Nuclear Fuels and Materials Library when possible
- Read RTE Rules for Proposal Submission (https://nsuf.inl.gov/Page/rte)
- Seek feedback

RTE Awards FY2010—FY2023



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RTE FY 2024 2nd Call Schedule

New →

Proposal Submittal & Review Schedule	
Solicitation period opens	2/1/2024
Call announcement seminar	2/6/2024 9-11 a.m. MST
Individual Q&A sessions *(must be scheduled in advance by contacting the RTE Administrator: Anna Podgorney)*	2/21/2024
Proposal due date	2/29/2024
Call closes at 4 p.m. Mountain Time	
Selection review	Estimated 4/1/2024
Proposals awarded	Estimated 6/1/2024

RTE Program Administration

- Brenden Heidrich, *Director*
- Collin Knight, *Deputy Director*
- Keith Jewell, *Chief Scientist*
- Rongjie Song, *Chief Scientist*
- Anna Podgorney, *RTE Administrator*

Please contact Anna in advance to schedule Individual Q&A session on Feb 21!


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