

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U. S. Department of Energy

Idaho Operations Office

Fiscal Year 2022 Distinguished Early Career Program

**Funding Opportunity Announcement:
DE-FOA-0002556**

**Announcement Type: Initial – December 6, 2021
Amendment 002-January 18, 2022**

CFDA Number: 81.121

Issue Date: December 6, 2021

Application Due Date: February 23, 2022, at 7:00 PM ET

Amendment 002: This amendment removes the changes to Part III, Section C that were incorporated with Amendment 001.

Amendment 001: This amendment is an administrative amendment that updates language for applicants. Updates for FOA:

- Cover page: Update to Full Application due date.
- Part III, Section C: Provides language regarding eligibility restrictions between IRP CINR projects and DECP.
- Part III, Section C: Updates on eligibility restrictions between CINR projects and DECP.
- Part III, Section C: Clarifies that individuals who have received funds from other comparable early career awards are not eligible for this award.

Table of Contents

| | |
|---|----------|
| PART I – FUNDING OPPORTUNITY DESCRIPTION | 1 |
| A. SUMMARY | 1 |
| B. MAJOR NE FUNDED RESEARCH PROGRAMS | 2 |
| B.1 Fuel Cycle Research and Development (FC R&D) Program | 2 |
| B.2 Reactor Concepts Research, Development, and Demonstration (RC RD&D) Program | 3 |
| B.3 Nuclear Energy Advanced Modeling and Simulation (NEAMS) Program..... | 4 |
| B.4 Nuclear Energy Enabling Technologies (NEET) Crosscutting Technology Development (CTD) | 4 |
| B.5 Nuclear Science User Facilities (NSUF) | 5 |
| PART II – AWARD INFORMATION | 6 |
| A. TYPE OF AWARD INSTRUMENT | 6 |
| B. ESTIMATED FUNDING | 6 |
| C. MAXIMUM AND MINIMUM AWARD SIZE | 6 |
| D. EXPECTED NUMBER OF AWARDS | 6 |
| E. ANTICIPATED AWARD SIZE | 6 |
| F. PERIOD OF PERFORMANCE | 6 |
| G. TYPE OF APPLICATION | 6 |
| PART III – ELIGIBILITY INFORMATION | 7 |
| A. ELIGIBLE APPLICANTS | 7 |
| B. COST SHARING | 7 |
| C. ELIGIBLE INDIVIDUALS | 7 |
| D. LIMITATIONS ON SUBMISSIONS | 8 |
| PART IV – APPLICATION AND SUBMISSION INFORMATION | 9 |
| A. ADDRESS TO REQUEST APPLICATION PACKAGE | 9 |
| B. DOCUMENT FORMAT REQUIREMENTS | 9 |
| C. CONTENT AND FORM for APPLICATIONS | 9 |
| C.1 SF-424 Research and Related (R&R) | 10 |
| C.2 Research and Related Other Project Information..... | 10 |
| C.3 Project Abstract | 10 |
| C.4 Project Narrative..... | 10 |
| C.5 Vitae..... | 11 |
| C.6 Career Objective Statement | 12 |
| C.7 Endorsement Letter from Academic/Unit Department Head | 12 |
| C.8 Capabilities..... | 12 |
| C.9 Research and Related Budget | 13 |
| C.10 Budget Justification | 13 |
| C.11 Current and Pending Support | 13 |
| C.12 Project/Performance Site Locations | 13 |
| C.13 Disclosure of Lobbying Activities (SF-LLL) | 14 |

| | | |
|---|---|-----------|
| C.14 | Certification and Assurances | 14 |
| C.15 | Data Management Plan (DMP) | 14 |
| C.16 | Foreign Government-Sponsored Talent Recruitment Program Certifications | 15 |
| C.17 | Summary of Required Forms/Files | 16 |
| D. | SUBMISSIONS FROM SUCCESSFUL APPLICANTS | 16 |
| E. | SUBMISSION DATES AND TIMES | 16 |
| E.1 | Application Due Date | 16 |
| E.2 | Late Submissions..... | 17 |
| F. | INTERGOVERNMENTAL REVIEW..... | 18 |
| G. | FUNDING RESTRICTIONS..... | 18 |
| G.1 | Prohibition related to Foreign Government-Sponsored Talent Recruitment Programs | 18 |
| H. | Cost Principles..... | 19 |
| I. | Pre-Award Costs..... | 19 |
| J. | OTHER SUBMISSION AND REGISTRATION REQUIREMENTS | 19 |
| PART V - APPLICATION REVIEW INFORMATION | | 21 |
| A. | CRITERIA | 21 |
| A.1 | Initial Review Criteria | 21 |
| A.2 | Merit Review Criteria | 21 |
| B. | REVIEW AND SELECTION PROCESS | 21 |
| B.1 | Merit Review..... | 21 |
| B.2 | Program Policy Factors | 22 |
| B.3 | Selection | 23 |
| B.4 | Review of Risk | 23 |
| B.5 | Discussions and Award | 23 |
| C. | ANTICIPATED NOTICE OF SELECTION AND AWARD DATES | 23 |
| PART VI – AWARD ADMINISTRATION INFORMATION | | 24 |
| A. | AWARD NOTICES..... | 24 |
| A.1 | Notice of Selection..... | 24 |
| A.2 | Nondisclosure and Confidentiality Agreements Representations..... | 24 |
| A.3 | Notice of Award | 25 |
| B. | ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS | 25 |
| B.1 | Administrative Requirements | 25 |
| C. | REPORTING | 28 |
| PART VII – QUESTIONS/AGENCY CONTACTS | | 29 |
| A. | QUESTIONS..... | 29 |
| B. | AGENCY CONTACTS | 29 |
| PART VIII – OTHER INFORMATION | | 30 |
| A. | AMENDMENTS..... | 30 |

| | |
|--|-----------|
| B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE..... | 30 |
| C. COMMITMENT OF PUBLIC FUNDS | 30 |
| D. PROPRIETARY APPLICATION INFORMATION..... | 30 |
| E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL | 31 |
| F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM..... | 31 |
| G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER..... | 31 |
| H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES | 32 |
| I. NO-COST TIME EXTENSIONS | 32 |
| J. REBUDGET REQUEST | 32 |
| K. CONFERENCE SPENDING..... | 32 |

Checklist for Avoiding Common Errors:

| Item | Issue |
|---|--|
| Page Limits | Strictly followed throughout application, including particular attention to: <ul style="list-style-type: none"> - Research Narrative - Career Objective Statement - Endorsement Letter - Vitae - Data Management Plan(s) (DMPs) |
| Protected Personally Identifiable Information | None present in the application |
| Project Abstract | Name of applicant, Principal Investigator (PI), PI's institutional affiliation(s), |
| Budget | Use current negotiated indirect cost and fringe benefit rates |
| Budget Justification (attached to budget) | Justify all requested costs |
| Vitae | Follow page limits strictly |
| Current and Pending Support | Ensure complete listing of all activities including brief abstract of scope of work for all items listed, regardless of source of funding |
| Certifications and Assurances | <ul style="list-style-type: none"> - Ensure that signatures are completed for both sections of the certifications and assurances documentation |
| R&R Other Project Information | <ul style="list-style-type: none"> - If marking proprietary information, clearly mark the sections where proprietary information is in the narrative or other documents using the procedure outlined in the FOA. - If marking 'yes' to international collaboration, list all institutions and countries. |
| Data Management Plans (DMP) | <ul style="list-style-type: none"> - If referring to an experiment's DMP, describe the relationship to the proposed research - Include a DMP even if no experimental data is expected |

LIST OF ACRONYMS

| | |
|-------------------|--|
| CFR | Code of Federal Regulations |
| CTD | Crosscutting Technology Development |
| DECP | Distinguished Early Career Program |
| DMP | Data Management Plan |
| DOE | Department of Energy |
| FC R&D | Fuel Cycle Research and Development |
| FFATA | Federal Funding and Transparency Act |
| FOA | Funding Opportunity Announcement |
| FSRS | FFATA Subaward Reporting System |
| HBCU | Historically Black Colleges and Universities |
| IHE | Institution of Higher Education |
| M&O | Management and Operating |
| M&TE | Measuring and Test Equipment |
| MSI | Minority-serving Institution |
| NE | Office of Nuclear Energy |
| NEAMS | Nuclear Energy Advanced Modeling and Simulation |
| NEET | Nuclear Energy Enabling Technologies |
| NRC | Nuclear Regulatory Commission |
| NSUF | Nuclear Science User Facilities |
| OMI | Other Minority Institution |
| PI | Principal Investigator |
| PICS:NE | DOE-NE Program Information Collection System |
| PIE | Post-irradiation Examination |
| QA | Quality Assurance |
| QOZ | Qualified Opportunity Zone |
| RC R&D | Reactor Concepts Research, Development and Demonstration |
| R&D | Research and Development |
| SAM | System for Award Management |
| SMR | Small Modular Reactor |

PART I – FUNDING OPPORTUNITY DESCRIPTION

General inquiries about this Funding Opportunity Announcement (FOA) should be directed to Andrew Ford at fordaj@id.doe.gov. Questions about the application system should be sent to NEUP@inl.gov.

A. SUMMARY

The Distinguished Early Career Program (DECP) is the Department of Energy Office of Nuclear Energy's (DOE-NE) most prestigious award for faculty members beginning their independent careers. The intent of the program is to provide stable support at a sufficient level and duration to enable awardees to develop careers, not only as outstanding researchers but also as educators demonstrating commitment to teaching, learning, and dissemination of knowledge. DOE-NE encourages all eligible applicants, especially women, members of underrepresented minority groups, and persons with disabilities to apply.

This FOA is soliciting distinguished early career applications that provide a clear research and education plan that highlights the applicant's research and educational strengths, the research and education vision to support the development of the faculty member, research infrastructure, curriculum, and research outcomes that will advance the applicant's research focus while training the next generation of nuclear energy professionals. Applications should focus on DOE-NE mission areas.

Integration of Research and Education - All applications should describe an integrated path that will lead to a successful career as an outstanding researcher, educator, and contributor to the broader nuclear energy community. DOE-NE recognizes that there is no single approach to an integrated research and education plan but encourages all applicants to think creatively about the reciprocal relationship between the proposed research and education activities and how they may inform each other in their career development as both outstanding researchers and educators. These plans should reflect the proposer's own disciplinary and educational interests and goals, as well as the needs and context of their organization. Because there may be different expectations within different disciplinary fields and/or different organizations, a wide range of research and education activities may be appropriate for this program.

DOE-NE's mission is to advance nuclear energy science and technology to meet U.S. energy, environmental, and economic needs.

NE has identified goals to address challenges in the nuclear energy sector, to help realize the potential of advanced technology, and to leverage the unique role of the government in spurring innovation:

1. Enable continued operation of existing U.S. nuclear reactors
2. Enable deployment of advanced nuclear reactors
3. Develop advanced nuclear fuel cycles and spent nuclear fuel management options

All applications submitted under this FOA must demonstrate a strong tie to the mission.

NE conducts crosscutting nuclear energy research and development (R&D), and associated infrastructure support activities, to develop innovative technologies that offer the promise of dramatically improved performance for its mission needs as stated above, while maximizing the impact of DOE resources.

NE strives to promote integrated and collaborative research conducted by national laboratory, university, industry, and international partners in conjunction with NE's programs, and to deploy innovative nuclear energy technologies to the market in order to meet the strategic goals and optimize the benefits of nuclear energy. NE funds research activities, through both competitive and direct mechanisms, as required to best meet those goals. This approach ensures a balanced R&D portfolio and encourages new nuclear power deployment with creative solutions to the universe of nuclear energy challenges. NEUP utilizes up to 20% of funds appropriated to NE's R&D program for university-based infrastructure support and R&D in key NE program-related areas: Fuel Cycle Research and Development (FC R&D), Reactor Concepts Research, Development and Demonstration (RC RD&D), and Nuclear Energy Advanced Modeling and Simulation (NEAMS). Nuclear Energy Enabling Technologies Crosscutting Technology Development (NEET CTD) supports national laboratory and university-led crosscutting research. By establishing the Nuclear Science User Facilities (NSUF) in 2007, DOE-NE opened up no-cost access to world-class nuclear research facilities such as material test reactors, beam lines, and post-irradiation examination facilities to researchers from U.S. universities, industry, and national laboratories.

B. MAJOR NE FUNDED RESEARCH PROGRAMS

B.1 Fuel Cycle Research and Development (FC R&D) Program

The mission of the FC R&D program is to develop used nuclear fuel management strategies and technologies to support meeting the federal government responsibility to manage and dispose of the nation's commercial used nuclear fuel and high-level waste and to develop sustainable fuel cycle technologies and options that improve resource utilization and energy generation, reduce waste generation, enhance safety, and limit proliferation risk.

The program's vision is that by mid-century, strategies and technologies for the safe, long-term management and eventual disposal of U.S. commercial used nuclear fuel, and any associated fuel cycle technologies that enhance the accident tolerance of light water reactors and enable sustainable fuel cycles, are demonstrated and deployed. Together, these technologies and solutions support the enhanced availability, affordability, safety, and security of nuclear-generated electricity in the United States.

Current challenges include the development of high burn-up fuel and cladding materials to withstand irradiation for longer periods of time with improved accident tolerance; simplified materials recovery technologies; waste management technologies including storage, transportation, and disposal; proliferation risk reduction methods; and processes and tools to evaluate and communicate sustainable fuel cycle system options.

FC R&D Points of Contact (POC) Table

| Program POC | Program Area | Contact |
|--------------------|---|--|
| Frank Goldner | Advanced Fuels / Accident Tolerant Fuels | Frank.Goldner@nuclear.energy.gov |
| Kenneth Kellar | Advanced Fuels / Advanced Reactor Fuels | Kenneth.Kellar@nuclear.energy.gov |
| Stephen Kung | Material Recovery and Waste Form Development – Aqueous Separation and Molten Salt Separations | Stephen.Kung@nuclear.energy.gov |
| Kimberly Gray | Material Recovery and Waste Form Development – Waste Form and Off-gas | Kimberly.Gray@nuclear.energy.gov |
| Sue Lesica | Materials R&D | Sue.Lesica@nuclear.energy.gov |

B.2 Reactor Concepts Research, Development, and Demonstration (RC RD&D) Program

The RC RD&D program conducts RD&D on existing and advanced reactor designs and technologies to enable industry to address technical challenges with maintaining the existing fleet of nuclear reactors, and to promote the development of a robust pipeline of advanced reactor designs and technologies, and supply chain capabilities. Program activities are designed to address technical, cost, safety, and security issues associated with the existing commercial light water reactor fleet and advanced reactor technologies, such as small modular reactor (SMR) and microreactor designs, fast reactors using liquid metal coolants, and high-temperature reactors using gas or liquid salt coolants.

RC RD&D POC Table

| Program POC | Program Area | Contact |
|--------------------|---|--|
| Alison Hahn | Light Water Reactor Sustainability (LWRS) – Physical Security | Alison.Hahn@nuclear.energy.gov |
| Bill Walsh | LWRS – Plant Modernization and Risk Informed Systems Analysis | William.Walsh@nuclear.energy.gov |
| Sue Lesica | LWRS – Materials R&D | Sue.Lesica@nuclear.energy.gov |
| Jason Marcinkoski | LWRS – Flexible Plant Operation and Generation | Jason.Marcinkoski@nuclear.energy.gov |
| Diana Li | Microreactor Program and High Temperature Gas Reactor | Diana.Li@nuclear.energy.gov |

| Program POC | Program Area | Contact |
|--------------------|---|--|
| Dylan Prevost | High Temperature Gas Reactor | Dylan.Prevost@nuclear.energy.gov |
| Brian Robinson | Molten Salt Reactor (MSR) and Sodium Fast Reactor (SFR) | Brian.Robinson@nuclear.energy.gov |
| Janelle Eddins | Advanced Reactor Regulatory Development | Janelle.Eddins@nuclear.energy.gov |
| Becky Onuschak | Advanced Small Modular Reactor RD&D | Rebecca.Onuschak@nuclear.energy.gov |
| Alison Hahn | Advanced Reactor Safeguards | Alison.Hahn@nuclear.energy.gov |

B.3 Nuclear Energy Advanced Modeling and Simulation (NEAMS) Program

The mission of the NEAMS program is to accelerate early-stage development of advanced reactor concepts and enable improved economics of new and existing designs by providing leading-edge computational tools to U.S. industry. The primary program objective is to develop and deploy these predictive tools and methods to industry, academia, and government, including the Nuclear Regulatory Commission (NRC), for research, analysis, design, and regulatory acceptance of advanced reactor and fuel cycle systems. These advanced computational tools employ scalable simulation methods on high-performance computing architectures, in combination with a science-based, mechanistic approach to physics modeling, to allow scientists and engineers to better understand reactor materials properties and coupled phenomena in nuclear energy systems. Consequently, these tools span length scales from atomic to mesoscale to engineering scale, and time scales from picoseconds to seconds to days. These tools are currently being used to move certain advanced reactor concepts forward to commercialization in several key ways, including design optimization, which is required to fully realize the economic and technological advantages of those concepts. NEAMS capabilities also support development of advanced nuclear fuels, design and analysis of nuclear fuel experiments, and expansion of NRC confirmatory analysis capabilities in the advanced reactor area.

NEAMS POC Table

| Program POC | Program Area | Contact |
|--------------------|---------------------|--|
| Dave Henderson | NEAMS | David.Henderson@nuclear.energy.gov |

B.4 Nuclear Energy Enabling Technologies (NEET) Crosscutting Technology Development (CTD)

The NEET CTD program conducts R&D in crosscutting technologies that directly support and enable the development of new and advanced reactor designs and fuel cycle technologies. These technologies will advance the state of nuclear technology, improve its competitiveness, and promote continued contribution to meeting our nation’s energy and environmental challenges.

The activities undertaken in this program complement those within the RC RD&D and FC R&D programs and support the DOE-NE mission. See Part I A. The knowledge generated through these activities will allow NE to address key challenges affecting nuclear reactor and fuel cycle deployment with a focus on crosscutting innovative technologies.

NEET-CTD POC Table

| Program POC | Program Area | Contact |
|-----------------------|---|--|
| Dan Nichols | Advanced Sensors and Instrumentation | Daniel.Nichols@nuclear.energy.gov |
| Dirk Cairns-Gallimore | Advanced Materials and Manufacturing Technologies | Dirk.Cairns-Gallimore@nuclear.energy.gov |
| Becky Onuschak | Cyber Security | Rebecca.Onuschak@nuclear.energy.gov |
| Jason Marcinkoski | Integrated Energy Systems | Jason.Marcinkoski@nuclear.energy.gov |

B.5 Nuclear Science User Facilities (NSUF)

DOE-NE funds access to world-class capabilities to facilitate the advancement of nuclear science and technology. This mission is supported by providing access, at no cost to the user, to state-of-the-art experimental irradiation testing and post-irradiation examination (PIE) facilities as well as technical assistance, including the design and analysis of reactor experiments. This unique model is best described as a distributed partnership with each facility bringing exceptional capabilities and expertise to the relationship, including reactors, beamlines, state-of-the-art instruments, hot cells and, most importantly, expert technical and scientific assistance. Together, these capabilities and people create a nation-wide infrastructure that allows the best ideas to be proven using the most advanced capabilities. Through NSUF, researchers and their collaborators are building on current knowledge to better understand the complex behavior of materials and fuels under irradiation.

NSUF POC Table

| Program POC | Program Area | Contact |
|-----------------|--------------|--|
| Tansel Selekler | NSUF | Tansel.Selekler@nuclear.energy.gov |

Past university research can be found at neup.gov.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding grants under this FOA.

B. ESTIMATED FUNDING

DOE anticipates that, subject to the availability of future year appropriations, a total of \$2,500,000 in current fiscal year funds will be used to support awards under this FOA. Awards are fully funded in the first project year.

DOE is under no obligation to pay for any costs associated with preparation or submission of applications. DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this FOA.

C. MAXIMUM AND MINIMUM AWARD SIZE

The total number of awards will depend on the number of meritorious applications and the availability of appropriated funds. The ceiling and floor for this FOA are the same. The maximum award for the DECP is \$625,000 over five years.

Additional Notes

Requested funding may vary year-by-year to accommodate the real and expected needs of the proposed research. The average DEC award supports the Principal Investigator (PI), research staff under the PI's direction (including postdocs and graduate students), equipment (including fabrication), and other necessary costs (materials, supplies, and travel).

D. EXPECTED NUMBER OF AWARDS

DOE anticipates up to 4 awards under this FOA. The exact number of awards will depend on the number of meritorious applications and the availability of appropriated funds.

E. ANTICIPATED AWARD SIZE

DOE expects the typical award size to be around \$625,000 over five years.

F. PERIOD OF PERFORMANCE

DOE anticipates making awards with a project period of 5 years.

G. TYPE OF APPLICATION

DOE will only accept new applications under this FOA.

PART III – ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

In accordance with 2 CFR 910.126 - Competition, eligibility for award is restricted to eligible individuals from U.S. IHEs, in accordance with information described in Part III C of this FOA.

The act of submitting an application implies that the submitting institution has checked, confirmed, and certifies that the PI is eligible, as outlined in Part III C.

Institutions of Higher Education

Applications must be submitted through a U.S. academic institution. An employee with a joint appointment between a university and a DOE national laboratory can apply through the IHE if the IHE pays their salary and provides their benefits.

B. COST SHARING

Cost sharing is not required.

C. ELIGIBLE INDIVIDUALS

Eligible individuals with the skills, knowledge, and resources necessary to carry out the proposed research as a PI are invited to work with their organizations to develop an application for assistance. Individuals from underrepresented groups, those with disabilities, and people from all geographic and economic backgrounds, are encouraged to apply.

In addition, DOE-NE strives to ensure energy justice and is fully committed to broadening the inclusion and contribution of those communities that have been historically underserved within its programs. Eligible PIs from minority-serving institutions (MSIs), Historically Black Colleges and Universities (HBCUs), or institutions located in overburdened and underserved communities are highly encouraged to apply to this FOA.

PIs of comparable early career awards funded by other federal agencies or entities are not eligible. PIs of early career awards with smaller funding amounts, can be eligible. Proposed research for this submission must have a scope different from that already funded by any organization.

PIs must be untenured assistant or associate professors on the tenure track. There can be no co-PIs.

Extensions to eligibility will be considered for individuals who have had a major life event requiring an extended absence (3 months or longer) from the workplace including, but not limited to, active military service, an absence due to personal disability, or an absence covered by the Family and Medical Leave Act. Requests for extended eligibility must be made by including in the application a letter signed by the dean, research vice president, or equivalent official stating that the proposed PI will have, as of the application deadline. The request for an

eligibility extension will be evaluated as part of the application assessment.

PIs must adhere to the respective eligibility standards below.

The eligibility requirements improve the quality of applications submitted and encourage those who are strong candidates to submit applications to the program.

The PI must be an **untenured** assistant or associate professor on the tenure track at a U.S. academic institution as of the deadline for the application. The PI must be employed in the eligible position as of the closing date for this FOA.

D. LIMITATIONS ON SUBMISSIONS

Only one application on behalf of a PI may be submitted in any given NE DECP competition. A PI may not participate in more than three NE DECP competitions.

Applicants can only be awarded one NE DECP award. Applicants are not eligible for award if the applicant has already been awarded other comparable federal early career awards.

Research objectives for this opportunity must be distinct from current or past funded DOE-NE projects that the applicant has participated in as a lead PI, co-PI, or collaborator.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Electronic applications and instructions are available at the [NEUP website](http://www.NEUP.gov). To access these materials, (1) go to www.NEUP.gov, (2) select “Sign In” from the top right hand corner of the screen, (3) enter your user credentials, (4) select “Applications” from the menu, and (5) click on “Create New Application” for the type of application you are creating. Apply at www.NEUP.gov.

Paper copies of the application package can be requested at:

INR Integration Office
Attn: Drew Thomas
PO Box 1625 MS 3730
Idaho Falls, Idaho 83415

Telephone: 208-526-1602
Fax: 208-526-1844

B. DOCUMENT FORMAT REQUIREMENTS

All non-budget documentation (use templates where provided) is to be prepared using standard 8.5” × 11” paper with 1-inch margins (top, bottom, left, right), using a font size no smaller than Times New Roman 11 point. This is a requirement for all pages included in the document, i.e., table of contents, references, etc. The preferred file format is Adobe Portable Document Format (PDF) for all documents except for spreadsheets. All spreadsheets are to be uploaded in Excel file format to the online application. Do **NOT** lock any cells in the spreadsheet.

Applicants must comply with all pertinent page limitations. Any text (including references and data tables) in a document that does not adhere to the requirements listed above (except graphics, graphs, charts, and equations) will be removed from the document and will not be reviewed. DOE reserves the right to dismiss applications that violate formatting requirements. Signature blocks must be signed by the designated official.

Documents should be saved using the document naming suggestion at the bottom of each document description. The tracking ID will automatically be generated by the application system and can be found at the top of the application form under “Tracking ID.”

DOE reserves the right to dismiss applications which it deems, after initial review, to lack enough detail for reviewers to adequately judge technical merit. Applications submitted with corrupted, incomplete, or incorrect files may be dismissed without further review.

C. CONTENT AND FORM FOR APPLICATIONS

C.1 SF-424 Research and Related (R&R)

Applicants shall complete the SF-424, R&R form, available at www.NEUP.gov, and upload a completed PDF copy of the form with the application.

Name File: 2022 SF424RR “Insert Tracking ID #”

C.2 Research and Related Other Project Information

Applicants shall complete items 1–6 on the R&R Other Project Information form available at www.NEUP.gov and upload a completed PDF copy of the form. Items 7-12 will be completed in the application form and do not need to be completed here.

Name File: 2022 R&R Other Project Information “Insert Tracking ID #”

C.3 Project Abstract

The project abstract must contain a summary of the proposed activity and be suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant; the project PI; the project title; a list of major deliverables; the scope and objectives of the project; a description of the project, including major tasks (phases, planned approach, etc.) and methods to be employed; the potential impact of the project (i.e., benefits, outcomes); and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information, as DOE-NE may make it available to the public after awards are made.

Name File: 2022 Technical Abstract “Insert Tracking ID #”; 1-page limit (use provided [Template](#) on the application site)

C.4 Project Narrative

The integrated research and education project narrative **must not exceed a page limit of 10 pages** of technical information, including title page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard letter-size (8.5 x 11 inch) paper with 1-inch margins (top, bottom, left, and right). The font must not be smaller than 11 point. Merit reviewers will only consider the number of pages within the specified 10 pages. Unlimited references are allowable at the bottom of the narrative beyond the limited 10 page project narrative described above.

Do not include any Internet addresses (URLs) that provide supplementary or additional information that constitutes a part of the application. Merit reviewers are not required to access Internet sites; however, Internet publications in a list of references will be treated identically to print publications.

Background/Introduction: Explanation of the importance and relevance of the proposed work, as well as a review of the relevant literature.

Project Objectives: This section should provide a clear, concise statement of the specific

objectives/aims of the proposed project.

Proposed Research and Methods: Identify the hypotheses to be tested (if any) and details of the methods to be used, including the integration of experiments with theoretical and computational research efforts.

Integration of Research and Educational Activities: Identify the educational aspects of the application and details about the methods and approaches the PI will use to integrate educational activities into overall project activities.

Timetable of Activities: Timeline for all major activities including anticipated milestones and deliverables.

This comprises the research plan for the project. It should contain enough background material in the introduction, including review of the relevant literature, to demonstrate sufficient knowledge of the state of the science. The majority of the narrative should be devoted to a description and justification of the proposed project, including details of the method to be used. It should also include a timeline for the major activities of the proposed project and should indicate which project personnel will be responsible for which activities.

There should be no ambiguity about which personnel will perform particular parts of the project, and the time at which these activities will take place.

Name File: 2022 Research Narrative “Insert Tracking ID #”; 10-page limit

C.5 Vitae

Provide a biographical vitae for the PI listed in Section A of the R&R Budget form.

- Contact information.
- Education and Training: Provide institution, major/area, degree, and year for undergraduate, graduate, and postdoctoral training.
- Research and Professional Experience: Beginning with the current position list, in chronological order (newest to oldest), professional/academic positions with a brief description.
- Publications: Provide a list of publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.
- Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications.
- Synergistic Activities: List any professional and scholarly activities related to the effort proposed.

Name File: 2022 CV “Last Name of Individual” “Insert Tracking ID #”; 5-page limit

C.6 Career Objective Statement

The applicant will provide a career objective statement that outlines the PI's research interests and educational priorities and how they align with DOE-NE priorities.

Name File: 2022 Career Statement "Insert Tracking ID #"; 2-page limit

C.7 Endorsement Letter from Academic/Unit Department Head

The applicant will submit an endorsement letter from their respective department head that speaks to the following:

- PI's qualifications
- Commitment to focus on nuclear energy research/education/service at the department level

Name File: 2022 Endorsement "Insert Tracking ID #"; 2-page limit

C.8 Capabilities

Provide information on the following, as applicable:

- **Infrastructure Requirements:** The applicant shall identify the infrastructure (e.g., facilities, equipment, instrumentation, and other resources) required to execute the proposed scope of work, including their location, availability, capabilities, and how they will be used in the project. Describe the non-labor (e.g., facilities, equipment, and instrumentation) resources that are available and accessible to the applicant and are required to execute the scope of work. Describe any unique equipment and facilities that are needed, are accessible, and will be used to execute the scope of work. Discuss the adequacy of these resources and identify any gaps and how these will be addressed.
- Ability to comply with the required or proposed performance schedule, taking into consideration all existing commercial and governmental business commitments.
- A satisfactory record of performance, integrity, and ethics.
- Necessary organization, experience, accounting and operational controls, or the ability to obtain them (including, as appropriate, such elements as property control systems, quality assurance measures, and safety programs).

See the electronic application submission instructions for document guidance. This FOA allows the applicant to propose the purchase of any needed equipment to conduct the proposed work. If equipment purchases are proposed, describe comparable equipment, if any, already at the institution and explain why it cannot be used.

Name File: 2022 Capabilities "Insert Tracking ID #"; 2-page limit

C.9 Research and Related Budget

Complete the Research and Related Budget form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. The applicant must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. The applicant must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this FOA.

C.10 Budget Justification

Provide a justification that explains all costs proposed in the budget. The following items of advice are offered to assist in developing a justification:

1. Organize the justification by listing items in the same order as presented on the budget.
2. Ensure that the narrative matches the budget in dollar amounts and language.
3. Explain the line items. If costs are estimated, provide a basis for the estimate. Explain if costs are based on prior experience of similar activities. If a cost is based on the product of two numbers (such as a number of items at a per-item price), ensure that the math is correct.
4. If including an inflationary factor for future budget periods, explain the basis for the inflationary factor.

Provide any other information necessary to justify your budget request. Including items in the budget justification is not considered a form of cost-sharing. Provide the details of all personnel (key or other) who will be working on the project, regardless of their source(s) of compensation. Explain their source(s) of compensation if it is not from this project. Include the indirect cost rate agreement as a part of the budget justification.

C.11 Current and Pending Support

Provide a list of all current and pending support for the PI regardless of funding source. Provide the Current and Pending Support as an appendix to the project narrative. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

If the same or similar research application has been submitted to an early career program at another agency or foundation, that application must be included as a pending application, with a required explanation of the similarities and/or differences with the current DECP application.

C.12 Project/Performance Site Locations

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

Note that the Project/Performance Site Congressional District is entered in the format of the 2-digit state code, followed by a dash and a 3-digit Congressional district code, for example VA - 001. Hover over this field for additional instructions.

Use the Next Site button to expand the form to add additional Project/Performance Site Locations.

C.13 Disclosure of Lobbying Activities (SF-LLL)

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant, you must complete and submit Standard Form- LLL, “Disclosure Form to Report Lobbying.”

C.14 Certification and Assurances

Applicants must complete and attach the Certifications and Assurances form found on the DOE Financial Assistance Forms Page at: <http://energy.gov/management/downloads/certifications-and-assurances-use-sf-424>.

Name File: 2022 Cert & Assurances “Insert Tracking ID #”

C.15 Data Management Plan (DMP)

This plan must be submitted for awarded project within 90 days of award. Not required for full application submission.

Provide a Data Management Plan (DMP) that:

1. Should describe whether and how data generated in the course of the proposed research will be shared and preserved. If the plan is not to share and/or preserve certain data, then the plan must explain the basis of the decision (for example, cost/benefit considerations, other parameters of feasibility, scientific appropriateness, or limitations discussed in #4). At a minimum, DMPs must describe how data sharing and preservation will enable validation of results, or how results could be validated if data are not shared or preserved.
2. Should provide a plan for making all research data displayed in publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital research data used to generate the displayed data should be made as accessible as possible to the public in accordance with the principles stated above. This requirement could be met by including the data as supplementary information to the published article, or through other means. The published article should indicate how these data can be accessed.
3. Should consult and reference available information about data management resources to

be used in the course of the proposed research. In particular, DMPs that explicitly or implicitly commit data management resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility.

4. DMPs must protect confidentiality, personal privacy, Personally Identifiable Information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation, and U.S. competitiveness; and otherwise be consistent with all applicable laws, regulations, and DOE orders and policies. There is no requirement to share proprietary data.

2-page limit, Name File “FY 2022 DMP “Insert Tracking ID #”

C.16 Foreign Government-Sponsored Talent Recruitment Program Certifications

Certification(s) must be submitted after award selections, during award negotiations. Certifications will not be collected at time of application submissions.

Prior to award, the recipient must certify to DOE, based on its knowledge and due diligence, that no individuals participating on the DOE-funded project, including individuals at the recipient and subrecipient level, are participating in a Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk. A Foreign Government-Sponsored Talent Recruitment Program is defined in Part IV, Section G.

“Participant(s)” refers to an individual, at the recipient or subrecipient level, who will work on the scientific, technical, or commercialization-related tasks and milestones of an award, or who have access to non-public information or data generated during or as a result of those tasks and milestones. “Participants” includes each person who will be working on the project for at least 160 hours, regardless of the source of compensation. The scope would include, but is not limited to:

- Principal Investigators
- Senior/Key Personnel
- Other professionals (e.g., engineers) or researchers
- Postdoctoral Associates
- Any individual directly funded, whole or in part, with project funds (federal funds and/or cost share funds)

Certifications will be required for all participants as defined above. This includes PIs, Co-PIs, collaborators, post-doctoral associates, students, and all others working at least 160 hours on the project, regardless of whether they are directly funded by the project.,

The applicable certification template will be provided to the recipient with submission instructions.

C.17 Summary of Required Forms/Files

| Name of Document | Format | Signature Required |
|--|--------|--------------------|
| SF-424 R&R | Form | Yes |
| Research and Related Other Project Information | Form | |
| Project Summary/Abstract | PDF | |
| Project Narrative | PDF | |
| Career Objective Statement | PDF | |
| Department Head Endorsement Letter | PDF | Yes |
| Vitae (5 pages) | PDF | |
| Capabilities (2 pages) | PDF | |
| SF-424 (R&R) Lead Budget Form | Form | |
| Budget Justification | PDF | |
| Current and Pending Support | PDF | |
| Project/Performance Site Location | PDF | |
| SF-LLL Disclosure of Lobbying Activities | PDF | Yes |
| Certifications and Assurances | Form | Yes |

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary including, but not limited to, the following:

- Point of contact information
- Indirect cost information
- Other budget information
- Name and phone number of the designated responsible employee for complying with national policies prohibiting discrimination (see 10 CFR 1040.5)
- Representation of limited rights data and restricted software, if applicable
- Commitment letter from third parties contributing to cost sharing, if applicable
- Environmental information

E. SUBMISSION DATES AND TIMES

E.1 Application Due Date

The application due date is printed on the cover of this FOA.

Applicants are encouraged to transmit their applications well before the deadline. Modifications to the application are not allowed after the application due date.

E.2 Late Submissions

Applicants are responsible for submitting any/all required submissions specified in this FOA, including applications, statements of work, and any modifications or withdrawals thereto, so as to reach the Government office designated in the FOA by the date/time specified in the FOA.

Any required FOA submittal, modification, or withdrawal received at the Government office designated in the FOA after the exact time specified for receipt of that submittal is “late” and will not be considered, unless it is received before award is made, the Contracting Officer determines that accepting the late submittal would not unduly delay the FOA award process, and:

- It was transmitted through an electronic commerce method authorized by the FOA, and received at the initial point of entry to the Government infrastructure no later than 5:00 pm one working day prior to the date specified for receipt of the submittal; or
- There is acceptable evidence to establish that it was received at the Government installation designated for receipt of the submittal and was under the Government’s control prior to the time set for receipt of the required submittal.

A late modification of an otherwise successful submittal or application that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the required electronic submission, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

If an emergency or unanticipated event interrupts normal Government processes such that the required submittal cannot be received at the Government office designated for receipt of the submittal by the exact time specified in the FOA, and urgent Government requirements preclude amendment of the FOA, the time specified for receipt of the required submittal will be deemed to be extended to the same time of day, as specified in the FOA, on the first work day on which normal Government processes resume.

Applications and other submittals may be withdrawn by written notice (sent electronically to NEUP@inl.gov) received at any time before the exact time set for receipt of that submittal. A required submittal may be withdrawn in person by an applicant or its authorized representative, if, before the exact time set for receipt of that submittal, the identity of the person requesting withdrawal is established and the person signs a receipt for the submittal.

If electronic applications cannot be submitted, applicants can contact:

INR Integration Office

Attn: Drew Thomas
PO Box 1625 MS 3730
Idaho Falls, Idaho 83415

Telephone: 208-526-1602
Fax: 208-526-1844

F. INTERGOVERNMENTAL REVIEW

This program is not subject to Executive Order 12372, “Intergovernmental Review of Federal Programs.”

G. FUNDING RESTRICTIONS

Funding for all awards is contingent upon the availability of funds appropriated by Congress for the purpose of this program in current and future fiscal years.

G.1 Prohibition related to Foreign Government-Sponsored Talent Recruitment Programs

a. Definitions

- 1. Foreign Government-Sponsored Talent Recruitment Program.** An effort directly or indirectly organized, managed, or funded by a foreign government to recruit science and technology professionals or students (regardless of citizenship or national origin, and whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to physically relocate to the foreign state for the above purpose. Some programs allow for or encourage continued employment at U.S. research facilities or receipt of Federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.
- 2. Foreign Country of Risk.** DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.
- 3. Scientific and Technical Information.** Information products deemed by the originator to be useful beyond the originating site (e.g., intended to be published or disseminated), in any format or medium, which contain findings and technological innovations resulting from R&D efforts and scientific and technological work of scientists, researchers, and engineers. Scientific findings are communicated through various media – e.g., textual, multimedia, audiovisual, and digital – and are produced in a range of products such as technical reports, scientific/technical conference papers, journal articles, workshop reports, program documents, invention reports, patent applications, patents, publicly

available scientific research datasets, or other forms of scientific and technical information.

b. Policy

Persons participating in a Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk are prohibited from participating in projects selected for federal funding under this FOA. The purpose of this prohibition is to ensure the protection of U.S. competitive and national security interests and DOE program objectives; prevent potential conflicts of interest; and limit unauthorized transfers of scientific and technical information.

c. Procedures

Prior to award, the recipient must certify to DOE, based on its knowledge and due diligence, that no individuals participating on the DOE-funded project, including individuals at the recipient and subrecipient level, are participating in a Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk. The applicable certification template will be provided to the selectees. In addition, the individuals on the project team must also complete similar certifications.

If an award results from an application submitted under this FOA, the recipient must exercise continuing due diligence to reasonably ensure that no individuals participating on the DOE-funded project are participating in a Foreign Government-Sponsored Talent Recruitment Program of a Foreign Country of Risk, and the recipient must provide an updated certification on a regular basis that will be defined in the award.

H. COST PRINCIPLES

Costs must be allowable, allocable, and reasonable in accordance with the applicable Federal cost principles referenced in 2 CFR 200, as adopted and amended by 2 CFR 910. The cost principles for for-profit organizations are in FAR Part 31.

I. PRE-AWARD COSTS

Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award if the costs are allowable in accordance with the applicable Federal cost principles. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90-day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

J. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

Where to Submit

Note: Submit applications through www.neup.gov to be considered for award. Submit electronic applications through the "Applications" function at www.neup.gov. For problems with

completing the registration process or submitting applications, call 208-526-1602 or email NEUP@inl.gov.

Application Validity Timeframe

By submitting an application in response to this FOA, applicants agree that their applications are valid for at least one year from the date set forth for receipt of applications to this FOA. DOE reserves the right (with concurrence of the applicant) to use the submitted application(s) to make additional awards for up to one year, even after DOE's initial selection announcement has occurred.

PART V - APPLICATION REVIEW INFORMATION

A. CRITERIA

A.1 Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for the award; (2) the information required by the FOA has been submitted; (3) all mandatory requirements are satisfied; (4) the proposed project is relevant to the DOE-NE mission; (5) the proposed project is responsive to the objectives of the FOA (see Part I, Section A.); and (6) the proposed project is not duplicative of programmatic work. Applications that fail to pass the initial review may be eliminated from further consideration.

A.2 Merit Review Criteria

Criterion 1 (33.34%)– Advances the State of Knowledge and Understanding and Addresses Gaps in Nuclear Energy Science and Engineering Research Areas: The technical merit of the proposed research will be evaluated, including the extent to which the project advances the state of knowledge and understanding and addresses gaps in nuclear energy science and engineering research areas. Evaluation will consider how important the proposed project is to advance knowledge and understanding within the topic area and how well the proposed project advances, discovers, or explores creative, original, or potentially transformative concepts that have broader impact.

Criterion 2 (33.33%) – Demonstrates an Integrated Research, Education and Service Plan to Address Broader Impacts to Society: The extent to which the plan advances nuclear energy related research and educational outcomes and the overall integration of the research and educational aspects of the application and addresses societal broader impacts. The extent to which the research and education vision supports the development of the faculty member, research infrastructure, curriculum, and research that will advance the applicant's research focus while training the next generation of nuclear energy professionals. Service impacts can include, but are not limited to, leadership for student, university, and community programs, STEM outreach, and diversity, equity and inclusion efforts.

Criterion 3 (33.33%)– Qualifications and Potential for Leadership Within the Nuclear Energy Community: The extent to which the applicant has the necessary knowledge, skills, and abilities to execute the project, the probability that the PI will be able to provide direct research contributions, the potential for scientific leadership and creative vision, and the potential for leadership in the technical area.

B. REVIEW AND SELECTION PROCESS

B.1 Merit Review

Applications that pass the initial review will be subjected to a formal merit review and will be evaluated based on the criteria outlined in this FOA.

B.2 Program Policy Factors

The Selection Official may consider the following program policy factors in the selection process:

- Degree to which proposed project optimizes/balances/maximizes use of available DOE funding to achieve DOE program goals and objectives, including how projects support DOE research. It may also include research portfolio diversity, geographic distribution and/or how the projects support other complementary efforts that, when taken together, will best achieve program research goals and objectives;
- Application selection may optimize appropriate mix of projects to best achieve DOE research goals objectives;
- Cost/Budget considerations, including availability of funding;
- Extent that the applicant has awards in progress, or not completed (e.g. unsubmitted final report, where applicable, by the milestone due date), from DOE, from a previous year's FOA, or has existing no cost extensions;
- Demonstrated ability of the applicant to successfully complete projects (including relevant prior projects) and do so within budget and within the specified timeframe of the award;
- Applicability across multiple nuclear technologies.
- Potential to enhance U.S. nuclear infrastructure may be given preferential consideration;
- Consistent and conformant work proposed in the application with current Office of Nuclear Energy Congressional appropriations.
- Applications that have national security concerns;
- Whether the entity is located in an urban and economically distressed area including a Qualified Opportunity Zone (QOZ) or the proposed project will occur in a QOZ or otherwise advance the goals of QOZ. The goals include spurring economic development and job creation in distressed communities throughout the United States;
- Whether the proposed project may directly or indirectly benefit disadvantaged communities or exhibits team member diversity, with participants including but not limited to those from Minority Serving Institutions (e.g., HBCUs/Other Minority Institutions (OMIs)), Minority Business Enterprises, Minority Owned Businesses, Woman Owned Businesses, Veteran Owned Businesses, or members within disadvantaged communities;
- Satisfaction of the initial review criteria.

Any of the above factors may be independently considered by the Selection Official in determining the optimum mix of applications that will be selected for support. These factors, while not indicators of the application's merit, may be essential to the process of selecting the application(s) that, individually or collectively, will best achieve the program objectives. Such factors are often beyond the control of the applicant. **Applicants should recognize that some very good applications might not receive an award because of program priorities and**

available funding. Therefore, the above factors may be used by the Selection Official to assist in determining which applications shall receive DOE funding support.

B.3 Selection

The Selection Official will consider the findings of the merit review and may consider any of the Program Policy Factors described above.

B.4 Review of Risk

Pursuant to 2 CFR 200.205, DOE will conduct an additional review of the risk posed by applications submitted under this FOA. Such review of risk will include:

- Quality of the application,
- Reports and findings from audits performed under 2 CFR 200 or OMB Circular A-133, and
- Systems maintained under 2 CFR 180.

DOE may make use of other publicly available information and the history of an applicant's performance under DOE or other Federal agency awards.

Applicants with no prior performance of DOE awards may be asked to provide information about their financial stability and or their ability to comply with the management standards of 2 CFR 200.

B.5 Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to the following: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulation); and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

It is anticipated that the award selection will be completed by June 2022. It is expected that awards will be made in Fiscal Year 2022.

DOE intends to have projects supported under this FOA begin work as early as August 2022 and no later than October 2022.

PART VI – AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

A.1 Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV, Section I with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

A notice of Federal award, signed by the DOE Contracting Officer, is the authorizing award document for any grants awarded as a result of this FOA. A post-selection/pre-award process will occur prior to issuing the actual award. This process includes such activities as a responsibility review/review of risk posed by the selected applicant, a technical and budget review of the selected applicant's proposed budget, etc. Once approved, the actual award notice will be provided by DOE to the recipient by electronic means.

A.2 Nondisclosure and Confidentiality Agreements Representations

In submitting an application in response to this FOA, the applicant represents that:

1. It does not, and will not, require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contractors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.
2. It does not, and will not, use any Federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:
 - a. "These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights or liabilities created by existing statute or Executive order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive Orders and statutory provisions are incorporated into this agreement and are controlling."
 - b. The limitation above shall not contravene requirements application to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

Notwithstanding the provision listed in paragraph (a), a nondisclosure or confidentiality policy

form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the United States Government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity, unless specifically authorized to do so by the United States Government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice, that are essential to reporting a substantial violation of law.

A.3 Notice of Award

An assistance agreement issued by the Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference, the following: (1) special terms and conditions; (2) applicable program regulations, if any; (3) application as approved by DOE; (4) DOE assistance regulations at 2 CFR part 200, as amended by 2 CFR 910; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

B.1 Administrative Requirements

The administrative requirements for DOE grants are contained in 2 CFR 200, as amended by 2 CFR 910 (See: <http://ecfr.gov>). Grants made to universities, non-profits, and other entities subject to Title 2 CFR are subject to the Research Terms and Conditions located on the National Science Foundation website at <http://www.nsf.gov/bfa/dias/policy/rct/index.jsp>.

B.1.1 DUNS and SAM Requirements

Additional administrative requirements for DOE grants are contained in 2 CFR, Part 25 (see <http://www.ecfr.gov/cgi-bin/ECFR?page=browse>). Prime awardees must be registered in the System for Award Management (SAM) before submitting an application, and must continue to maintain a SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by DOE under this FOA. Primes and subawardees at all tiers must obtain Data Universal Numbering System (DUNS) numbers and provide the DUNS to the prime awardee before the subaward can be issued. The prime will provide this valid unique entity identifier in its application. DOE may not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make the award, DOE may determine that the applicant is not qualified to receive an award and use that determination as a basis for making an award to another applicant.

B.1.2 Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR, Part 170 (see <http://www.ecfr.gov/cgi-bin/ECFR?page=browse>). Prime awardees must register with the new

FFATA Subaward Reporting System (FSRS) database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the SAM.

B.1.3 Special Terms and Conditions and National Policy Requirements

The DOE special terms and conditions for use in most grants are located at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Award Terms.

If the Federal share of any Federal award may include more than \$500,000 over the period of performance, post award reporting requirements reflected in 2 CFR 200, Appendix XII—*Award Term and Condition for Recipient Integrity and Performance Matters*, may also apply to any resultant award made under this FOA.

The National Policy assurances to be incorporated as award terms are located at <http://www.nsf.gov/bfa/dias/policy/rtc/appc.pdf> and at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Award Terms.

Quality assurance (QA) to be incorporated as award terms (applicable to educational institutions only).

While DOE will normally rely on the institution's QA system, below are general guidelines that those systems should adhere to, as applicable, for the type of work being done. No separate deliverable is required by this provision, unless the institution's existing QA systems are not compliant with these guidelines, or in the case that the institution identifies that the work to be performed has any special or unique QA requirements. The DOE has the right of access to the university facilities and records for surveillance or inspection. Any surveillance or inspections will be coordinated with the PI.

- **Test Planning, Implementation, and Documentation (Research Planning)**
 - Test methods and characteristics shall be planned and documented, and the approaches and procedures recorded and evaluated. Characteristics to be tested and test methods shall be specified. The test results shall be documented and their conformance to acceptance criteria evaluated.
 - Documentation shall be developed to ensure replication of the work. The researcher/developer shall document work methods and results in a complete and accurate manner. The level of documentation shall be sufficient to withstand a successful peer review. Protocols on generation and safeguarding of data and process development from research shall be developed for consistency of R&D work.
 - Laboratory notebooks shall be controlled by a university documented procedure/process. Also, the process for development of intellectual property documentation shall be controlled under university document control procedures/processes.

- If the university identifies any special or unique QA requirements for Test Planning, Implementation, and Documentation, the university shall submit a Test Plan/Research Plan to the funding organization for review and concurrence prior to use.

- **Equipment Calibration and Documentation**

The researcher shall specify the requirements of accuracy, precision, and repeatability of measuring and test equipment (M&TE). Depending upon the need for accuracy, precision, and repeatability of M&TE used in research, standard university documented procedures shall be implemented. During the process development stage, and for all R&D support activities, M&TE shall be controlled. The degree of control shall be dependent on the application of the measurement. The university shall have available calibration records documenting instrument calibration to a national standard.

- **Procurement Document Control**

University documented procurement document control procedures/processes shall be implemented, if results of initial research work are expected in the next stage of work, and if the pedigree of materials being used could influence the usefulness of the research work results. Procurement document specifications shall be controlled. For development and support activities, the level of procurement document control shall be applied to support a design basis, i.e., engineering design system criteria. If procurement document control requirements apply, the university shall have a documented procedure/process for control of suspect/counterfeit items (S/CI), and have available for submission for DOE review material pedigree records.

- **Training and Personnel Qualification**

Personnel performing research activities shall be trained per university documented requirements to ensure work is being conducted properly to prevent rework or the production of unacceptable data. The university shall have available—for submission for DOE review—personnel training records.

- **Records**

In many cases, the notebook or journal of the researcher is the QA record. These documents shall be controlled in accordance with university documented procedure/process, e.g., maintain notebook as a controlled document, maintain copies of critical pages or access-controlled filing when not in use to preserve process repeatability and the QA record. Electronic media may be used to record data and shall be subject to documented administrative controls for handling and storage of data. Work activity records shall be maintained by the university and available for DOE review, upon request, within sixty (60) days of completion of the work scope.

- **Data Acquisition/Collection and Analysis**

When gathering data, the researcher shall ensure that the systems and subsystems of the experiment are operating properly. Software systems used to collect data and operate the experiment requires verification that it meets functional requirements prior to collection of actual data. Data anomalies require investigation. When performing data analysis, define (1) assumptions and the methods used; (2) the results obtained so that independent qualified

experts can evaluate how data was interpreted;(3) methods used to identify and minimize measurement uncertainty; (4) the analytical models used; and (5) whether the R&D results have been documented adequately and can be validated.

- **Peer Review**

Peer reviews shall be performed in accordance with peer review best practices as described in Part V. The peer reviews shall be documented and maintained by the university. Peer review documentation and results shall be provided to DOE.

B.1.4 Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at <http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>.

B.1.5 Lobby Restrictions

By accepting funds under this award, the applicant agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

B.1.6 Corporate Felony Conviction and Federal Tax Liability Representations

In submitting an application in response to this, FOA the applicant represents that:

- It is not a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months.
- It is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply: A corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States (but not foreign corporations). It includes both for-profit and non-profit organizations.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. A sample checklist is available at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Award Forms.

PART VII – QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of this FOA must be submitted to the Agency Contact listed in Part VII, Section B. For clarification on program scope areas, applicants can communicate directly with the Program Points of Contact listed in Part I, Section B. Questions pertaining to items such as application process, eligibility, or application document requirements should be directed to NEUP@inl.gov.

Answers to submitted questions containing information about the FOA or the FOA process, that would be necessary for the preparation of applications, will be posted to www.NEUP.gov as soon as practical. DOE will try to respond to a question within three (3) business days unless a similar question and answer have already been posted on the website.

Interested parties are encouraged to ask questions as early in the FOA process as possible. Questions and comments concerning this FOA shall be submitted not later than five (5) business days prior to the application due date. Questions submitted after that date may not allow the Government sufficient time to respond.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process, must be directed to NEUP@inl.gov.

B. AGENCY CONTACTS

Name: Mr. Andrew Ford
E-mail: fordaj@id.doe.gov

PART VIII – OTHER INFORMATION

A. AMENDMENTS

Notices of any amendments to this announcement will be posted on www.FedConnect.net and www.Grants.gov and will also be posted as a courtesy on www.NEUP.gov. It is recommended that the website is checked frequently at www.NEUP.gov to ensure timely notice of any amendments or other announcements.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by anyone other than the Contracting Officer, either explicit or implied, is invalid.

Funding for all awards is contingent upon the availability of funds appropriated by Congress for the purpose of this program.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages [Insert pages] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting an application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest (COI) and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. The Government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in Section G below.)

Rights in Technical Data. Normally, the Government has unlimited rights in technical data created under a DOE agreement. Delivery or third-party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. This program is covered by a special protected data statute. These special protected data statutes apply to only those applicants who cost share. The provisions of the statute provide for the protection from public disclosure, for a period of up to five (5) years from the development of the information, of data that would be a trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data - Programs Covered Under Special Protected Data Statutes (Item 4 under 2 CFR 910, Appendix A to Subpart D), would apply to an award made under this announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and will also identify data that will be recognized by the parties as protected data.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within thirty (30) days after the effective date of the award. Even if an advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784 at <http://energy.gov/gc/services/technology-transfer-and->

[procurement/office-assistant-general-counsel-technology-transf-1](#) under the Patent Waivers.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic non-profit organizations to retain title to subject inventions. Therefore, small businesses and non-profit organizations do not need to request a waiver.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those that encourage or support political activities such as the collection and dissemination of information related to potential, planned, or pending legislation.

I. NO-COST TIME EXTENSIONS

Unilateral no-cost time extensions will NOT be permitted to awards made under this FOA. All no-cost time extensions must provide adequate justification and receive approval from the Contracting Officer. No-cost time extensions should be requested as soon as the need is identified within the last year of the award.

No-cost time extensions on existing DOE-NE funded projects must be requested between October 1-April 15. Any request outside of this period will need to be substantially justified and receive approval from the Contracting Officer. One no-cost time extension request may be granted for up to 12 months pending review and approval. No more than one no-cost time extension will be allowed. No-cost time extensions must be submitted prior to the deadline to NEUP@inl.gov.

J. REBUDGET REQUEST

Any rebudget request where the cumulative amount of such change is expected to exceed 10 percent of the total budget as last approved by the Federal awarding agency must be requested in writing (see 2 CFR 200.308). The request must include a detailed budget justification, and an updated budget in the same format for which was included in the original application. Any request for the purchase of equipment exceeding \$5K must be requested in writing to include a valid quote, and justification for purchase.

Budget forms can be found at <https://www.energy.gov/management/downloads/sf-424-research-and-related-budget-rr>

K. CONFERENCE SPENDING

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant was awarded that would defray the cost to the United States government of a conference held by any executive branch department, agency, board, commission, or office for which the cost to the United States government would otherwise

exceed \$20,000, thereby circumventing the required notification by the head of any such executive branch department, agency, board, commission, or office to the inspector general (or senior ethics official for any entity without an inspector general), of the date, location, and number of employees attending such conference.