DEPARTMENT OF ENERGY
NATIONAL NUCLEAR SECURITY ADMINISTRATION
OFFICE OF RESEARCH, DEVELOPMENT, TEST, AND EVALUATION



STEWARDSHIP SCIENCE ACADEMIC ALLIANCES PROGRAM

CENTERS OF EXCELLENCE

NOTICE OF FUNDING OPPORTUNITY (NOFO)

ANNOUNCEMENT NUMBER:

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NOFO TYPE: INITIAL

ASSISTANCE LISTING NUMBER: 81.112

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Submission Deadline for Pre-Applications:	**August 22, 2022**
Encourage/Discourage Date	**September 06, 2022**
Submission Deadline for Applications:	October 19, 2022
Expected Date for Selection Notifications:	March 2023

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UPDATES AND REMINDERS

RECOMMENDATION

The Department of Energy (DOE) National Nuclear Security Administration (NNSA) encourages you to register in all systems as soon as possible. You are also encouraged to submit pre-applications and applications well before the deadline.

CURRENT AND PENDING SUPPORT AND BIOSKETCHES

The instructions for the content of current and pending support and biosketches have changed. Please read the instructions carefully and follow them.

REPORTING AND ADMINISTRATIVE REQUIREMENTS

DOE/NNSA is implementing enhanced reporting requirements for applications and awards. Reporting and administrative requirements, including but not limited to those pertaining to other sources of support and potential conflicts of interest or commitment, are subject to change before the Federal award date. The terms and conditions of award will specify changed requirements: Applicants have the right to reject any proposed awards. Terms and conditions may be modified at the time of an award modification: Recipients have the right to reject such modifications and allow an award to expire.

UNIQUE ENTITY IDENTIFIER (UEI)

The Federal Government is transitioning from the Data Universal Numbering System (DUNS), assigned by Dun and Bradstreet at https://fedgov.dnb.com/ to the UEI, assigned by the System for Award Management at https://www.sam.gov. Information systems including SAM.gov amd Grants.gov are being updated: Please follow the on-screen instructions or contact each system's Help Desk for additional information. Detailed information about the transition is available at https://www.gsa.gov/about-us/organization/federal-acquisition-service/office-of-systems-management/integrated-award-environment-iae/iae-information-kit/unique-entity-identifier-update.

ACKNOWLEDGMENT OF FEDERAL SUPPORT

For peer reviewed and technical papers, the following acknowledgment of support is required:
"This material is based upon work supported by the National Nuclear Security Administration, Stewardship Science Academic Alliances, under Award Number [DE-NA-XXXXXX]."

NNSA follows the general format of the Office of Science. More specific guidance can be found at: https://science.osti.gov/funding-opportunities/acknowledgements/.

PUBLIC ACCESS

Awards made under this NOFO are subject to DOE's Public Access Plan (https://www.energy.gov/downloads/doe-public-access-plan). Full-text version of scientific publications must be made publicly accessible at no charge to readers.

NNSA STATEMENT OF COMMITMENT

The NNSA is fully and unconditionally committed to fostering safe, diverse, equitable, and inclusive work, research, and funding environments that value mutual respect and personal integrity. Discrimination and harassment undermine NNSA's ability to achieve its mission by reducing productivity, discouraging, or inhibiting talent retention and career advancement, and weakening the integrity of the NNSA enterprise overall. NNSA does not tolerate discrimination or harassment of any kind, including sexual or non-sexual harassment, bullying, intimidation, violence, threats of violence, retaliation, or other disruptive behavior in the federal workplace, including DOE field site offices, or at national laboratories, scientific user facilities, academic institutions, other institutions receiving NNSA funding, or other locations where activities funded by NNSA are carried out.

PDF GENERATION

The research narrative in an application must be one single machine readable PDF file that contains the Title Page, project narrative, biographical sketch, current and pending support, bibliography and references cited, facilities and other resources, equipment, and other attachments. This single PDF file may not be scanned from a printed document and must be attached in Field 8 on the Grants.gov form. You are strongly encouraged to submit the combined research narrative file through a "Print to PDF" or equivalent process to ensure that all content is visible in one PDF file.

Section I – FUNDING OPPORTUNITY DESCRIPTION

GENERAL INQUIRIES ABOUT THIS NOFO SHOULD BE DIRECTED TO:

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STATUTORY AUTHORITY

Atomic Energy Act of 1954, as amended, Section 31, Public Law 83-703, 68 Stat. 919, 42 U.S.C. 2051; Energy Reorganization Act of 1974, Title 1, Section 107, Public Law 93-438, 88 Stat. 1240, 42 U.S.C. 5817; Federal Nonnuclear Energy Research and Development Act of 1974, Public Law 93-577; Department of Energy Organization Act of 1977, as amended, Public Law 95-91, 42 U.S.C. 7101

APPLICABLE REGULATIONS

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, codified at 2 CFR 200
U.S. Department of Energy Financial Assistance Rules, codified at 2 CFR 910

SUMMARY

Defense Programs, within the Department of Energy's (DOE) National Nuclear Security Administration (NNSA), directs research and development activities to maintain the safety, security, and effectiveness of the nation's nuclear weapons stockpile. This nuclear deterrent remains a vital part of our national security infrastructure. It maintains strategic stability, deters potential adversaries, and reassures our allies and partners of our security commitments. Since 1992, the United States has observed the moratorium on underground nuclear testing while significantly decreasing the size of its nuclear arsenal. National Policy required NNSA and its weapons laboratories to institute the science-based Stockpile Stewardship Program (SSP) to ensure the safety, security, and effectiveness of the stockpile, while allowing the country to

pursue a variety of nonproliferation and disarmament goals. The SSP combines sophisticated experiments, highly accurate physics modeling, and improved computational power to simulate and predict nuclear weapon performance over a wide range of conditions and scenarios.

The Stewardship Science Academic Alliances (SSAA) Program was established in 2002 to support state-of-the-art research at U.S. academic institutions in areas of fundamental physical science and technology of relevance to the SSP mission. The SSAA Program provides the research experience necessary to maintain a cadre of trained scientists at U.S. universities to meet the nation's current and future SSP needs, with a focus on those areas not supported by other federal agencies. It supports the DOE/NNSA's priorities both to address the workforce specific needs in science, technology, engineering, and mathematics and to support the next generation of professionals who will meet those needs.

Defense Programs Office of Strategic Partnership Programs announces their interest in receiving applications for new or renewal cooperative agreement financial assistance awards for Centers of Excellence for research in the Stewardship Science Academic Alliances (SSAA) Program. Only applications for cooperative agreements awards will be accepted for this solicitation, no grant applications will be considered.

The specific areas of interest are:

1. Advanced Characterization of Materials Properties under Extreme Conditions
2. Low Energy Nuclear Science
3. Radiochemistry
4. High Energy Density Physics

SUPPLEMENTARY INFORMATION

Program Objectives

The objectives of the SSAA Program are to:

- Develop the next generation of diverse, highly trained technical workers able to support NNSA's core missions.
- Maintain technical expertise external to the nuclear security enterprise for providing valuable advice, cross-check, and peer review.
- Enable innovation to strengthen key fields of research relevant to the NNSA mission, thereby enhancing nuclear security missions.

Technical Scope and Topical Research Areas

The DOE/NNSA will consider applications for university-led research which can address one or more of the fundamental areas of physical sciences outlined below. Proposals should have an appropriate balance between experimentation and analysis using theory and computational simulation and be of relevance to the NNSA Defense Programs stockpile stewardship mission.

Proposals that advance theory and physical modeling should have a strong, demonstrable connection to experimental efforts.

All proposed work to be funded through this SSAA Program announcement is to be UNCLASSIFIED. No proposals for CLASSIFIED work will be accepted.

1. **Topic Research Area # 1: Advanced Characterization of Materials Properties under Extreme Conditions**

   This topical research area is written to be multi-disciplinary in nature, incorporating physics (e.g., condensed matter, shock), chemistry, materials science, and engineered materials. Research proposals are solicited in the area of fundamental properties and behavior of materials under extreme conditions, including high-pressure (> 5 GPa), high-temperature, or fast material loading rates (>10^4 per second). The breadth of this topical area includes, but is not limited to:

   Material Properties under Extreme Conditions:

   Experimental investigations of quasi-static high pressure and dynamically driven materials and interrogation of their properties under conditions of high-pressure, high-temperature, high-strain and/or high-strain-rate. Of particular interest are experimental techniques that access and probe dynamic compression phenomenon with novel time-resolved optical and x-ray probes.

   Materials properties of interest may include thermodynamic properties (equation-of-state, high-pressure phase diagram, pressure-induced phase transformation, etc.), kinetics of phase transformations, constitutive properties (plasticity and strength, failure, fracture, etc.), material anisotropy, and microstructure.

   Examine the nature, mechanisms and kinetics of phase transformations and microstructural changes in condensed matter. Study phase transformations through the nucleation and growth, and development of new matrix or precipitate phases. Observe Martensitic or Eutectoid transformations, or spinodal decomposition with the objective of understanding phase transformations that drive microstructural changes and resulting macroscale properties.

   Development of predictive models of material behavior under extreme conditions based on closely integrated experiment and theory. Of particular interest are models that assess microstructural effects (e.g., grain structure, defects, impurities) on dynamic response. Development of computational tools to aid in data analysis and data mining to enhance understanding of experimental results may also be of interest.

   Other research areas of interest include geological and planetary science, shock physics, and constitutive properties of high-pressure materials. Consideration will also be given to proposals that explore material properties of engineered materials and materials produced using advanced manufacturing techniques. Proposals including major research themes in explosives synthesis and trans-uranic elements are discouraged.

Novel Characterization, Imaging, and Detection:

Develop and apply novel characterization methodologies, imaging and detection techniques toward understanding material properties and their performance. The following areas are of interest: optical and x-ray measurements such as velocimetry, ultrafast imaging, high repetition rate imaging or detection, diffractive techniques, spectroscopy, and tomographic techniques; and novel time-resolved diagnostics. X-ray source development is not an area of interest. Materials research that may lead to future advances in new x-ray sensors/detector is of potential interest. Measurement techniques should lead to a high-fidelity observation of physical phenomena at relevant temperature, density and/or strain conditions, length and time scales, and temperature measurements under extreme conditions.

2. Topic Research Area # 2: Low Energy Nuclear Science

Research proposals are solicited in the area of low energy nuclear science. Measurement and theory development should be done in a manner to include focus on the systematic errors in the process. The breadth of this topical area includes, but is not limited to:

- Investigations, including nuclear theory, differential and/or integral measurements, leading to greater accuracy in the nuclear data of stable and unstable nuclei and corresponding reaction rates for neutron, gamma, and charged particle-induced reactions.
- Development of advanced simulations and measurement techniques leading to improved radiation and particle detection methods, in terms of energy, temporal, and spatial resolution.
- Physics of the fission process, including measurements or theory to understand fission fragment yields and energies, the multiplicity and distributions of the prompt neutrons and gammas, and the subsequent emissions from the fission fragment products including correlations in energy, multiplicity, and direction among the emitted particles.
- Development of advanced nuclear physics experimental diagnostic methods relevant to proton, x-ray, or other radiographic techniques, or to cross section and reaction rate measurements involving unstable and radioactive nuclei.
- Physics of neutron scattering processes, including measurements or theory to understand the energy and angular dependence of elastic and inelastic reactions.

3. Topic Research Area # 3: Radiochemistry

Research proposals are solicited in the area of radiochemistry with an emphasis on studies of the heavier elements and the actinides. The breadth of this topical area includes, but is not limited to:

- Improvements in isotope production and harvesting methods, chemical separation techniques, and coordination chemistry of actinides and fission products.
- Investigations which particularly address systematic uncertainties while leading to

greater accuracy in neutron- and particle- induced cross sections of the actinides.
- Production procedures and techniques to manufacture pure targets, especially short-lived nuclei including americium, for use in nuclear science measurements, including new methods and procedures for harvesting rare isotopes at radioactive ion beam facilities.
- Environmental chemistry of plutonium and other actinides and development of advanced radio-analytical methods to measure actinide elements in environmental samples that improve the knowledge of the behavior of actinides in relevant environments and scenarios.
- Development of novel detector systems to improve spectral measurement sensitivity and/or new chemistry procedures to process irradiated targets to prepare them for precision measurements.

4. Topic Research Area # 4: High Energy Density Physics

Research proposals are solicited in the area of high energy density physics (HEDP), with particular emphasis on an integration of theory, experiment, and simulation. High energy density laboratory plasmas are defined as matter reaching approximately 100 billion Joules per cubic meter (the dissociation energy density of a hydrogen molecule) corresponding to a pressure of approximately 1 Mbar. Free electrons play a significant role in the dynamics in HEDP and the underlying assumptions and methods of traditional ideal-plasma theory and standard condensed matter theory do not apply.

The breadth of this topical area includes, but is not limited to:

- Properties of matter in high energy density regimes, e.g. those produced by lasers and/or pulsed power drivers. This includes investigations in related areas of high pressure material behavior, plasma physics, inertial fusion, atomic physics, radiation generation and propagation, and the interaction of radiation with matter.
- Experiments using HED facilities that yield information about astrophysical or geophysical phenomena.
- Diagnostics and measurement techniques for the observation of physical phenomena under high energy density conditions, including techniques for laser- or pulsed power-driven systems.
- Development of numerical and computational tools that assist in the design and analysis of experimental HED science and theoretical and computational capabilities to deliver HED-relevant models, such as plasma transport and plasma EOS.
- Advanced driver technologies that could lead to significant advances in the conditions that can be reached on present and future HED drivers (laser and pulsed power technology).
- Advances in experimental target fabrication and characterization methods.

Expectations of a Center of Excellence

A successful Center of Excellence:

- forms an effective collaborative team,
- establishes a Center Scientific Advisory Committee,
- recruits and trains students, early career researchers, and staff scientists and provides them with exposure to researchers and the environment of the NNSA National Laboratories,
- has a committed Director and collaborators, and
- fulfills all obligations and reporting requirements.

Forms an Effective Collaborative Team. A successful Center of Excellence consists of a multi-investigator team, preferably from multiple academic institutions, which address the over-arching theme of interest within one of the topical research areas described in this NOFO. The Principal Investigator, or PI, serves as the Director of the Center, and leads the effort collaboratively with the other senior researchers. The PI's institution is the assignee for the cooperative agreement. Members of the multi-investigator team are "Partners." The "Center" is defined as the Partners plus the PI. A Center of Excellence conducts research to address the scientific areas of interest as a team, in a manner that is more efficient and effective than by the members of the team acting separately. The Center demonstrates an integrated use of theory, experiment, simulation and technology. The Center has a sustained and successful leadership and management team comprised of lead senior researchers from the academic partners. NNSA Laboratory researchers may not receive funding through this NOFO and therefore would not be "partners".

The Center investigators, students, and early career researchers are encouraged to engage and collaborate with NNSA National Laboratory researchers in their scientific research. However, the National Laboratories are not part of the Center's multi-institutional "partner" team and DOE/NNSA laboratories are not eligible to receive direct funding associated with this NOFO. National Laboratory researchers are funded through existing Management & Operating (M&O) Contracts with NNSA.

Establishes a Center Scientific Advisory Committee. Successful Centers establish a Center Scientific Advisory Committee (CSAC) within the first year after award. The members of the committee are external to the institutions of the Center. A minimum of five and maximum of seven members comprise the CSAC. Members of the CSAC are subject matter experts or technical experts in an area of research closely related to that of the Centers and have experience leading and managing research efforts. The CSAC must include at least three subject matter experts or technical experts from at least two, preferably three, different NNSA National Laboratories or NNSA Production Facilities with expertise in the Center's research area. The DOE/NNSA SSAA Program Manager (SSAA PM) has review and approval authority for membership of the CSAC and must be notified for approval in a timely fashion of any changes to the committee.

The CSAC acts as an external advisory and review board for the Center that continually strengthens the Center and its contributions to meeting the goals of the SSAA Program. The CSAC meets at a Center location at least annually to review progress and scientific plans, and to advise on management of the Center and on planning for future collaborations. The SSAA PM shall be informed at least one month in advance of the meetings of the CSAC and may elect to

observe the meetings. The CSAC produces an annual report of Findings and Recommendations from the review that is submitted to the Director of the Center and to the SSAA PM.

Additional details on the role of the CSAC may be included in the Special Terms and Conditions section of the cooperative agreement. For Centers that operate their own experimental facility, the CSAC will provide recommendations to the Center for general technical direction and experimental execution plan, including allocation of facility time. For Centers that use experimental facilities operated by others, the CSAC provides recommendations for general technical direction and scientific priorities. The SSAA PM may request the CSAC to review specific matters pertaining to the Center as part of their annual meeting.

Recruitment and development of students, early career researchers, and staff scientists. A successful Center of Excellence attracts the brightest and most talented students and early career researchers, attracting them to the exciting opportunities for research in fields relevant to stockpile stewardship. The Center students benefit from opportunities to spend time at the DOE/NNSA National Laboratories, participate in on-site practicums, engage with National Laboratory scientists, and participate in symposia. A successful Center sends at least one PhD student who is funded under the cooperative agreement to meaningfully engage in a research experience at one of the three DOE/NNSA National Laboratories for a significant period of time (preferably at least 8 weeks) each year, either through internship or some other arrangement. The student may be a different individual from year to year. Alternative approaches may be proposed but they must provide PhD students of the Center with equivalent or more meaningful research experiences and engagement with the DOE/NNSA National Laboratories and must be approved by the Federal Program Manager. The alternative approach will be evaluated as part of the Center Review, and approval may be rescinded if the alternative approach is not meeting expectations. The Director of the Center, researchers, and students present the results of their research at conferences and symposiums, including at the Stewardship Science Academic Programs (SSAP) Annual Review Symposium. The Center takes the initiative to reach out to other academic institutions that haven't had a strong connection to stockpile science, to educate and engage students and faculty in the opportunities and activities of the Center.

Center graduates are encouraged to seek post-doctoral or staff positions at NNSA Laboratories. It is NNSA's desire that graduates of the Center pursue careers either at U.S. institutions, U.S. universities, or at the NNSA National Laboratories, contributing to fields of science that are Defense Program-relevant. Early career researchers and staff scientists involved in the Center have opportunities to conduct exciting research, participate in collaborative efforts, and to assume leadership roles. The Director and senior researchers will actively mentor junior staff, helping to develop future leaders.

Commitment of Director and Collaborators to the Center of Excellence. The success of a Center depends on the engagement of the Director and the senior researchers. It is the responsibility of the primary institution to notify, in writing and in a timely fashion, the DOE/NNSA Contracting Officer and the SSAA PM of any significant change in the time commitment of the Center's Director and senior research team to the work of the Center; such changes include reductions in effort, leaves of absence, joint appointments, retirements,

sabbaticals, or intents to move to another institution. Failure to do so could result in reductions in funding, scope, or project period.

Prospective key personnel must indicate all sources of current or pending funding in the application. Once funds are awarded, key personnel are required to notify the SSAA PM of any changes in such additional funding, including foreign sources of funding. The SSAA PM must be notified, in a timely fashion and in writing, of any change in the Center's key researcher's efforts for a period of over 3 months.

Fulfills all obligations and reporting requirements. The Center of Excellence is required to fulfill all obligations and reporting requirements under the cooperative agreement. A post-award orientation meeting will be held with each Center to communicate roles and responsibilities under the agreement. The DOE/NNSA Contracting Officer and the SSAA PM will review the terms, conditions, reporting requirements, and the Statement of Substantial Involvement with the Principal Investigator and Contracting Officer, or their representative(s), of the grantee institution.

Center Reviews and Site Visits

The SSAA PM for each Center will review the performance of the Center through site visits, site reviews, annual Research Performance Progress Report, publications by Center personnel, and *ad hoc* communications. The SSAA PM will conduct Center site reviews not more frequently than annually, and at least 60 days prior to determination of continuation of funding. Each Center and its personnel are expected to conduct research in the highest standards of the academic community and the missions of the DOE/NNSA. If a Center is not performing satisfactorily, the SSAA PM and the DOE/NNSA Contracting Officer will notify the institution of the performance issues/concerns, recommended action(s), and the timeline to demonstrate satisfactory performance. If performance does not improve to satisfaction and/or problems are not corrected, reduction in funding to the Center or termination of the cooperative agreement may result.

The Center will be reviewed on a number of factors, which may include, but are not limited to: progress toward accomplishing milestones and addressing key scientific and technical challenges, technical contributions demonstrated through publications, efficient use of resources, recruitment strategy, level of involvement of the doctoral students and post-doctoral researchers in the work of the Center, and exposure of the graduate students and post-doctoral researchers to the research and staff at the NNSA National Laboratories. Also the Center will be reviewed on how successful it is at using a collaborative team approach that positively impacts the research program.

Participation in Center Activities and Compliance

The SSAA Program was established, in part, to support the long-term development of U.S. human capital in the fields of science, engineering, mathematics, and technology relevant to stockpile stewardship. NNSA follows a graded approach for reviewing and approving access by foreign nationals to DOE sites, programs, information and technologies, in accordance with DOE Order 142.3 A.

Any individual person receiving funding support under this cooperative agreement must be a U.S. Person (see Section III. A) or the Center Director/Principal Investigator must request and receive written permission for such funding from the SSAA PM.

The DOE/NNSA Contracting Officer or the SSAA PM can request, in writing, personally identifiable information (PII), such as full name, nationality, date of birth, and social security number, of individuals engaged in activities of, receiving support from, or benefiting from the resources of the Center. The DOE/NNSA SSAA PM can exclude individuals from receiving funding from the cooperative agreement, from using the resources of the Center, and from participating in Center activities.

All awards made under this NOFO are subject to future implementation of applicable DOE policy directives, including but not limited to those which implement Presidential Memorandum on United States Government-Supported Research and Development National Security Policy, National Security Policy Memorandum – 33, January 14, 2021.

DOE National Laboratories follow DOE Order 142.3 A, "Unclassified Foreign Visits and Assignments Program" which defines the program for unclassified foreign national access to DOE sites, information, technologies, and equipment. Access approvals for foreign nationals to NNSA National Laboratories are subject to validation and verification of the information submitted for the access request when the visit or assignment begins. Establishing collaborative research relationships between universities and the DOE National Laboratories is more difficult for foreign nationals to accomplish due to access restrictions at DOE/facilities and may prevent foreign nationals from participating in experiments or on-site practicums at DOE Laboratories.

All applicants are responsible for ensuring compliance with all applicable U.S. Export Control laws and regulations and all other applicable security requirements relating to any work performed under a resulting award.

Open Science

DOE/NNSA is dedicated to promoting the values of openness in Federally supported scientific research, including, but not limited to, ensuring that research may be reproduced and that the results of Federally supported research are made available to other researchers. These objectives may be met through any number of mechanisms including, but not limited to, data access plans, data sharing agreements, the use of archives and repositories, and the use of various licensing schemes.

The use of the phrase "open-source" does not refer to any particular licensing arrangement but is to be understood as encompassing any arrangement that furthers the objective of openness.

All entities submitting applications to this NOFO must recognize the moral and legal obligations to comply with export controls and policies that limit the transfer of technologies with potential dual use. Applicants are reminded that international activities must comply with nonproliferation, sanction, and other protocols described at https://www.export.gov.

International activities related to special nuclear materials (SNM) are subject to additional requirements. Please see 10 CFR 810 for further information.

This NOFO is to support scientific endeavors that could be described in scholarly publications. Do not submit applications containing restricted data or unclassified nuclear information as defined in the Atomic Energy Act of 1954, as amended, 42 USC 2011, et seq., 10 CFR 1017, 10 CFR 1045.

Section II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE/NNSA anticipates awarding cooperative agreements under this funding opportunity announcement.

Statement of Substantial Involvement

A cooperative agreement is intended to be offered under this announcement. The proposed Federal involvement will provide programmatic benefits that the SSAA cooperative agreement recipient would not otherwise have available to it in carrying out the project. The statutory authorities for the use of a cooperative agreement are the Federal Grant and Cooperative Agreement Act (31 U.S.C. 6301-08).

Substantial involvement is anticipated between NNSA and SSAA award recipients during the performance of this cooperative agreement due to the expectation that NNSA will share in the responsibility for the overall direction of the SSAA Centers. Substantial involvement by NNSA under this cooperative agreement spans the term of the cooperative agreement award unless otherwise amended. This statement of substantial involvement by NNSA does not increase NNSA's liability under the cooperative agreement award.

The DOE/NNSA Contracting Officer and DOE/NNSA Project Officer will negotiate a Statement of Substantial Involvement with each SSAA cooperative agreement award recipient prior to award.

B. ESTIMATED FUNDING

Approximately $19,000,000 annually is anticipated to be available for new or renewal awards under this announcement. Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority. DOE/NNSA is under no obligation to pay for any costs associated with preparing or submitting an application. DOE/NNSA reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this NOFO.

C. MAXIMUM AND MINIMUM AWARD SIZE

Ceiling (i.e., the maximum amount for an individual award made under this announcement): $3,000,000 per year

Floor (i.e., the minimum amount for an individual award made under this announcement): $1,000,000 per year

The award sizes will depend on the merit review, the number of meritorious applications, and the availability of appropriated funds. For renewal proposals, notwithstanding the "Floor" identified below, DOE/NNSA may consider limited-term renewal awards to allow for the completion of research projects and orderly closeout of Centers of Excellence that do not merit long-term continued support. Annual funding for such awards could fall below the $1,000,000 floor. Recognizing that new centers take some time to ramp up to full operations, for new awards DOE/NNSA may award less in Year 1 of the five-year project period than in subsequent years.

D. EXPECTED NUMBER OF AWARDS

The number of awards will depend on the availability of appropriated funds, the number of meritorious applications, the distribution of funds in each topic area determined by the DOE/NNSA selection official, the merit review results, and other policy factors and considerations. DOE/NNSA reserves the right to make no awards, not award in all topical research areas, or make fewer awards than would be possible at the grand-total level at its sole discretion.

E. ANTICIPATED AWARD SIZE

DOE/NNSA anticipates that awards will be in the $3,000,000 to $15,000,000 range for the total project period.

F. PERIOD OF PERFORMANCE

DOE/NNSA anticipates making awards with an estimated project period of up to five years. The overall project duration will be subdivided into annual budget periods. Continuation funding (funding for subsequent budget periods) is contingent on: (1) availability of funds appropriated by Congress and future year budget authority; (2) substantial progress towards meeting the objectives of the approved application; (3) submittal of required reports; and (4) compliance with the terms and conditions of the award.

For renewal proposals, DOE/NNSA may consider limited-term renewal awards to allow for the completion of research projects and orderly closeout of Centers that do not merit long-term continued support. The duration of such awards would not exceed two years.

G. TYPE OF APPLICATION

DOE/NNSA will accept new and renewal applications under this announcement. Renewal applications are requests for additional funding for a period subsequent to that provided by a current award. Renewal applications compete with all other applications and must be submitted by any established due date/deadline. In preparing a renewal application, applicants should assume that reviewers will not have access to previous applications. The application should be developed as though the applicant were applying for the first time. The application must include all the information required for a new project, plus the project narrative section should discuss the results from prior work.

Section III – ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

Restricted Eligibility
In accordance with 2 CFR 910.126(b), eligibility for award is restricted to the following domestic organizations located in the United States, its territories or possessions, as follows:

U.S. universities/academic institutions of higher education. For the purpose of this announcement "a U.S. university/academic institution of higher learning" is defined as an educational institution in any State, Federal District, or U.S. territory that:

1. admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such a certificate;

2. is legally authorized within such State to provide a program of education beyond secondary education;

3. provides an educational program for which the institution awards a bachelor's degree or provides not less than a 2-year program that is acceptable for full credit toward such a degree; and

4. is accredited by a nationally or regionally recognized accrediting agency or association, or if not so accredited, is an institution that has been granted reaccreditation status by such an agency or association that has been recognized by the U.S. Secretary of Education for the granting of reaccreditation status, and the U.S. Secretary of Education has determined that there is satisfactory assurance that the institution will meet the accreditation standards of such an agency or association within a reasonable time.

For prospective applicants who are submitting financial assistance applications to this NOFO, the individual(s) selected as the PI and Co-PI(s) for the cooperative agreement must be a U.S. Person(s) and be an active member of the teaching/research faculty of a U.S. university or academic institution of higher learning.

A "U.S. Person" is defined as an individual that is a citizen of the United States or an alien lawfully admitted for permanent residence.

Adjunct professors, visiting professors, and post-doctoral fellows are ineligible to be PIs. Investigators from foreign universities or academic institutions, irrespective of citizenship, are ineligible to be PIs. Such individuals may receive funding under a subaward if the Principal Investigator requests and receives written permission for such funding from the SSAA PM. There may be security restrictions on participation by foreign nationals at certain facilities and conferences, in accordance with applicable U.S. Department of Energy Security Policy, Directives, Regulations, or Requirements.

All persons receiving funding or direct involvement in the activities supported under this cooperative agreement must be a U.S. Person or the Director/Principal Investigator must request and receive written permission for such funding from the SSAA PM. Requests for addition of non-US-persons is required throughout the period of award.

Other Eligibility Requirements

Federally Funded Research and Development Centers (FFRDC) (includes DOE/NNSA National Laboratories and other Federal Agency-Sponsored FFRDCs) are not eligible for an award under this announcement. However, FFRDCs may participate as collaborators in order to:

(1) promote and sustain scientific interactions between the academic community and scientists at the FFRDC Laboratories through exchange of information and/or personnel,
(2) increase the availability of unique experimental facilities sited at the FFRDC Laboratories to the academic community, particularly for collaborations in areas of relevance to stockpile stewardship, and
(3) develop and maintain a long-term recruiting pipeline to the DOE/NNSA FFRDC's by increasing the visibility of the DOE/NNSA scientific activities to the U.S. faculty and student communities.

FFRDCs are not eligible to receive any direct funding associated with this NOFO, except for reimbursement for use of facilities that require "user fees" in accordance with the institution's written policies or procedures.

To affect this collaboration, a letter from an FFRDC employee who will be collaborating with the applicant must be submitted with the application. This letter must outline their understanding and role in the collaboration effort and indicate that no funds will be provided to the FFRDC from the awarded cooperative agreement except for reimbursement for use of facilities that require "user fees" as stated above.
In addition to the collaboration letters, FFRDC contractors may be proposed as a team member on another entity's application subject to the following guidelines:

Authorization for non-DOE/NNSA FFRDCs. If selected for award, the Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project. The use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.

Authorization for DOE/NNSA FFRDCs. If selected for award, the cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project. The following wording is acceptable for this authorization.

"Authorization is granted for the [*Name*] Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the

missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector.

If selected for award, the recipient is responsible for making contact with the appropriate DOE/NNSA FFRDC collaborating partner(s) who should in turn obtain prior written authorization from the DOE/NNSA FFRDC Contracting Officer.

Cooperative Agreement Applicant Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

The Master Government List of FFRDCs is available at: http://www.nsf.gov/statistics/ffrdclist/

B. COST SHARING

Cost sharing is not required for the SSAA Program because DOE/NNSA has determined that projects funded under this Program are limited to research and/or development projects which are of a "basic" or "fundamental" nature. A Cost Share Waiver dated July 14, 2011 has been approved for the SSAA Program. This is in accordance with Section 988 of the Energy Policy Act of 2005 (P.L. 109-58, 42 USC 16352), and 2 CFR 910.130.

C. LIMITATIONS ON SUBMISSIONS

There is no limit on the number of proposals the same institution or PI can submit to this NOFO. Multiple proposals may also be submitted to each topic research. When submitting multiple proposals ensure that the same PI or supporting staff time does not exceed 100% of their time on all combined proposals and ensure that all proposals are submitted in complete form with all required attachments as specified in the NOFO. Multiple awards may be made to the same institution.

Section IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to https://www.Grants.gov, select "Search Grants" and then enter the Assistance Listing number (81.112) and/or the NOFO number shown on the cover of this NOFO. Select the "Apply" button to access the application package. You are encouraged to review the Applicant FAQs in Grants.gov as you prepare and submit your application.

Applications submitted through www.FedConnect.net will not be accepted.

B. LETTER OF INTENT (LOI) AND PRE-APPLICATION

1. Letter of Intent (LOI)

LOI's are not required or invited.

2. Pre-application - REQUIRED

DUE DATE listed on cover of this announcement.
Encourage/Discourage Date listed on the cover of this announcement.

A pre-application is **required** for all applications submitted in response to this NOFO. **This is a new requirement for the Stewardship Science Academic Alliances Program.** To be considered eligible for an award under this NOFO, potential lead organizations are required to submit a pre-application in accordance with the instructions provided below, and to receive notification from DOE/NNSA that they are allowed to submit a full proposal. Applications received from an applicant who has not submitted the required pre-application, or who has received notification from DOE/NNSA that they are disallowed from submitting a full application, will be deemed non-responsive and will be rejected without further review.

In addition, the lead organization identified in the full application must be the same lead organization identified in the pre-application. If an application is received for which the lead organization has changed since submission of the pre-application, the application will be deemed non-responsive and will be rejected without further review. The Lead Principal Investigator (PI) should not be changed unless unavoidable and only minor edits should be made, if necessary, to the title of the project. If necessary, the applicant may make changes to other senior/key personnel and other participating institutions, although DOE/NNSA discourages extensive changes.

The pre-application should include a cover page with the following information:

- Pre-application Title
- Lead Principal Investigator Name, Title, Email address
- Lead Organization
- List of all Partner Organizations (funded and unfunded)

- Funding Opportunity Announcement Number listed on the cover of this announcement.

This cover page must be signed by an official of the lead organization who has the authority to commit institutional/entity support for the application and by the proposed PI. The cover page should be followed by a narrative description of the mission, scientific goals, and research approaches, a potential scientific impact of the proposed Center, including at least the following elements:

- A clear and concise statement of the scientific mission of the proposed Center;
- An explicit set of up to five-years research goals designed to support that mission;
- A description of the research methods and approaches that will be used to achieve the goals of the Center;
- An explanation of the potential scientific impact of the proposed research and the need for an integrated, multi-disciplinary research team to conduct it;
- A discussion of how the proposed research is responsive to the objectives of this NOFO.

This description of the proposed Center should not exceed **five pages** (excluding the cover page) when printed on 8.5 X 11 inch paper, with a minimum text font size no smaller than Times New Roman 11 point and margins no smaller than one inch on all sides. Any figures and references, if included, must fit within the five-page limit. If the pre-application exceeds five pages, only content on the first five pages will be read and considered.

In addition, following the five-page narrative, the pre-application should include the following two tables, which will not count toward the five-page limit:

Senior/Key Personnel Table *

Last Name	First Name	Institution

*Should include the names and institutional affiliations of all Senior/Key Personnel on the pre-application, including the Lead PI.

Collaborator Table **

Last Name	First Name	Institution

**Should include co-authors over the past 48 months, graduate and postdoctoral advisors of the senior/key personnel, graduate students and postdoctoral associates who have been supervised by the senior/key personnel during the past 60 months, and any other current close associations of the senior/key personnel. This table should *exclude* all personnel at any of the institutions listed in the Senior/Key Personnel Table.

NOTE: Applicants should follow the exact format of the sample tables because the tabular information will be compiled across all pre-applications. **The applicant should submit the pre-application and the original Excel files it used to create its tables via email to Terri Stone (terri.stone@nnsa.doe.gov) by the pre-application due date listed on the cover of this announcement. The subject line of the email should read "SSAA Center Pre-application" followed by the PI's last name and the lead organization name, e.g. "SSAA Center Pre-application: Jones, University of XYZ".**

Key Personnel and Collaborator Tables formatting tips:
- Do not merge name or institution cells, even if individuals share the same institution.
- Do not change the order of the columns.
- For the Senior/Key Personnel and Collaborator Tables, do not include any additional information (e.g. "PI", "Co-PI", or footnote symbols) under "Last Name" and "First Name" and do not include departmental affiliations under "Institution."
- If an individual has a joint appointment, separate the institutions with a "/" (i.e. "Univ of X / National Lab Y").

C. GRANTS.GOV APPLICATION SUBMISSION AND RECEIPT PROCEDURES

Applications in response to this NOFO must be submitted through Grants.gov. Detailed instructions for registering in and using Grants.gov are in Section VIII of this NOFO.

D. CONTENT AND APPLICATION FORMS

All applicants **including sub-applicants** must complete the mandatory forms and any applicable optional forms in accordance with the instructions on the forms and the additional instructions below.

Letters from collaborators or from institutions providing access to equipment and/or facilities may be appended to your research narrative and are not considered part of the research narrative's page limit. Please ensure that letters from collaborators or from institutions providing access to equipment and/or facilities only describe the nature of the collaboration or the access to equipment and/or facilities**: Letters of support or recommendation are not allowed in applications under this NOFO.**

1. SF-424 (R&R) [MANDATORY for Prime Applicant and Sub-Applicants]

In **Grants.gov Workspace**, *Complete SF-424 Fields First*: The forms are designed to fill in common required fields across other forms, such as the applicant's name, address, and UEI number. To trigger this feature, an applicant must complete the SF-424 information first. Once it is completed, the information will transfer to the other forms.

NOTE: If sub-applicants will participate in this award, this form is mandatory and must be submitted for all sub-applicants

IMPORTANT UPDATE APPLICANTS The certifications and assurances referenced in

Field 17 of the Application for Federal Assistance are now contained in the System for Award Management (SAM) as Financial Assistance General Certifications and Representations.

TYPE OF APPLICATION (FIELD 8)
A **new** application is one in which DOE/NNSA support for the proposed research is being requested for the first time. A **renewal** application requests additional funding for a period of time following a current award. If the application requests a significant change in the scope of work, please consult with the Program contact identified in this NOFO to determine if the application should be considered new or a renewal.

Please answer "yes" to the question "Is this application being submitted to other agencies?" if substantially similar, identical, or closely related research objectives are being submitted to another Federal agency. Indicate the agency or agencies to which the similar objectives have been submitted.

2. Research and Related Other Project Information [MANDATORY for Prime Applicant]

Complete questions in fields 1 through 6 of the SF-424 Research and Related Other Project Information form.

The bulk of your application will consist of files attached to the Research and Related Other Project Information form. The files must comply with the following instructions:

PROJECT SUMMARY/ABSTRACT (FIELD 7 ON THE FORM) [MANDATORY FOR PRIME APPLICANT]
The project summary/abstract is a summary of the proposed activity suitable for distribution to the public and sufficient to permit potential reviewers to identify conflicts of interest. It must be a self-contained document that identifies:

- the name of the applicant,
- the project director/principal investigator(s),
- the project title,
- the objectives of the project,
- a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects), and
- milestones listed by year.

This document must not include any proprietary or sensitive business information as the Department may make it available to the public after awards are made. The project summary must not exceed 2 pages when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) {single spaced} with font not smaller than 11 point. To attach a Project Summary/Abstract, click "Add Attachment."

Use Attachment A – Project Summary Information, as a sample.

PROJECT NARRATIVE [MANDATORY FOR PRIME APPLICANT]
The project narrative **must not exceed 35 pages**, including cover page, table of contents, charts, graphs, maps, photographs, tables, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) {single spaced} with font not smaller than 11 point. This page limit does not apply to the Title Page, Budget Page(s), Budget Justification, biographical material, publications and references, and appendices. See Section VIII for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment".

EVALUATORS WILL ONLY REVIEW THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING PARARAPH. Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed.

Cover Page: The Project Narrative Cover Page should include:

- NOFO Number.
- Topic Area.
- Project Title.
- Type of proposed award: New Award or Renewal of Existing Award (specify award number for existing award).
- Name and address of submitting organization
- Name, email address, and telephone number of organization's business point of contact or Grants office point of contact.
- Name, mailing address, email address, telephone number, of PI.
- Listing of any DOE/NNSA National Laboratory, Plant, or Site personnel collaborating on the project.
- List of subawards: name of Co-PI, institution, and email
- List the average number of undergraduate students, graduate students, postdoctoral researchers, technicians, and faculty members to potentially be supported across the project period.
- Include a table modeled on the following chart providing summary budget information from all collaborating institutions. Provide the total costs of the budget request in each year for each institution and totals for all rows and columns.

Award	PI Name(s)	Institution	State	Year 1 Budget	Year 2 Budget	Year 3 Budget	Year 4 Budget	Year 5 Budget	Total Budget
Prime									
Sub									
Sub									

Total Budget	N/A	N/A	N/A						

Use Attachment B – Project Narrative Summary as a sample

The Project Narrative comprises the research plan for the project. It should contain enough background material in the Introduction, including a brief review of the relevant literature and any prior research in this area, to demonstrate sufficient knowledge of the state of the science. The major part of the narrative should be devoted to a description and justification of the proposed project, including details of the methods 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.

The following organization of the Project Narrative is suggested:

- **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.
- **Scientific and Technical Merit**: This section should address how the project will advance the current state of science and technology in alignment with the Program Objectives in Section I. Address the scientific and technical risks associated with the proposed approach. If your application is for renewal of an existing SSAA Award, discuss the results from prior work.
- **Attracting Other Personnel**: A description of the steps the Center will take to attract and retain the highest quality students, post-doctoral research associates, faculty, and staff to the Center. The application should include specific approaches to: (1) introduce students and staff within the Center to staff at the DOE/NNSA National Laboratories; (2) ensure staff at the DOE/NNSA National Laboratories are apprised of and welcomed to assist in the activities of the Center; (3) enhance technical interaction between the Center and the DOE/NNSA National Laboratories over the cooperative agreement award term; and (4) provide younger scientists with opportunities to develop leadership and management skills. Success in implementation of that approach will be a factor in judging the performance of the Center.
- **Merit Review Criterion Discussion**: The section should be formatted to address each of the merit review criterion and sub-criterion listed in Section V. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE/NNSA WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION.
- **Relevance and Outcomes/Impacts**: This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts.

Clearly demonstrate how the project will support the research goals of the SSAA Program with one or more of the project topic areas described in Section I.C. This section should also outline the performance goals for the project and include milestones to measure the project's progress. Upon selection, these milestones will be reported as described in the Federal Assistance Reporting Checklist.

- **Diversity, Equity, and Inclusion**: Include a discussion of activities and structure of the project/group/PI that will enhance diversity, equity and inclusion under the award.
- **Management Plan**: This section should address the proposed management plan and timeline that will lead to the achievement of the stated objectives. Concisely written tasks should be provided in a logical sequence. Include a Project Timeline in the management plan.
- **Roles of Participants**: Describe the roles and the work to be performed by each participant/investigator, business agreements between the applicant and participants, and how the various efforts will be integrated and managed.
- **Multiple Principal Investigators and Coordination and Management Plan**: The applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. This decision is solely the responsibility of the applicant. If multiple PIs will be designated, the application must identify the Contact PI/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PIs.

All applicants should complete the following appendices and attach them to the final Project Narrative document. All the requested information for the following appendices will not count in the Project Narrative page limitation of no more than 35 pages.

APPENDIX 1: BIOGRAPHICAL SKETCH

Provide a biographical sketch for the PI and each senior/key person listed in Section A on the R&R Budget form.

- Provide the biographical sketch information as an appendix to your project narrative.
- Do not attach a separate file.
- The biographical sketch appendix will not count in the project narrative page limitation.
- The biographical information (curriculum vitae) for each person must not exceed two pages when printed on letter-size (8.5 inch x 11 inch) paper with 1-inch margins (top, bottom, left, and right) with font not smaller than 11 point

Detailed instructions may be found in Section VIII of this NOFO.

WARNING: These instructions for Biographical Sketches and Current and Pending Support have been significantly revised to require disclosure of a variety of potential conflicts of interest or commitment, including participation in foreign government-sponsored talent recruitment programs.

The PI and each senior/key person at the prime applicant and any proposed subaward must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or

voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All foreign government-sponsored talent recruitment programs must be identified in current and pending support.

APPENDIX 2: CURRENT AND PENDING SUPPORT

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

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

Detailed instructions may be found in Section VIII of this NOFO.

APPENDIX 3: IDENTIFICATION OF POTENTIAL CONFLICTS OF INTEREST OR BIAS IN SELECTION OF REVIEWERS

Provide a list of potential conflicts of interest or bias in selection of reviewers for your application. Detailed instructions may be found in Section VIII of this NOFO.

APPENDIX 4: BIBLIOGRAPHY & REFERENCES CITED

Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. For research areas where there are routinely more than 10 coauthors of archival publications, you may use an abbreviated style such as the *Physical Review Letters* (PRL) convention for citations (listing only the first author). For example, your paper may be listed as, "A Really Important New Result," A. Aardvark et. al. (MONGO Collaboration), PRL 999. Include only bibliographic citations. Applicants should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. Provide the Bibliography and References Cited information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

APPENDIX 5: FACILITIES & OTHER RESOURCES

This information is used to assess the capability of the organizational resources, including subrecipient resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project.

Allocation of resources / facility use time:

a. If collaboration with a DOE/NNSA laboratory is proposed in which experiments will take place at a DOE/NNSA facility, the proposal should discuss how access to the facility will be accomplished. The PI is responsible for contacting the DOE/NNSA facility director to discuss any facility-related activities, including beam-time availability, shot schedule, etc. The process by which access to the necessary experimental facility is obtained should be discussed in the proposal. If possible, a letter from either the facility director or program manager (who has experiment schedule authority at the facility) should be included with the proposal indicating the facility has the appropriate availability and that the proposed work on the facility is feasible.

b. When the activities of the grant use a facility owned or operated by the home institution of the PI, the proposal should include or reference the facility use plan for the facility, detailing the process by which Collaborators within the grant and other researchers will be allotted facility use or experimental time.

c. The proposal must present a detailed scientific justification for any request for capital equipment and for construction investments necessary for the grant to achieve its scientific goals. Requests for construction investments not specifically related to the scientific goals of the grant and requests for facility operating funds outside of that needed to conduct experiments to achieve the scientific goals of the grant will not be considered.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

APPENDIX 6: EQUIPMENT AVAILABLE

List major items of equipment already available for this project and, if appropriate identify location and pertinent capabilities. Provide the Equipment information as an appendix to your project narrative.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

APPENDIX 7: NON-U.S. CITIZEN SUPPORT LIST

A "U.S. Person" is defined as an individual who is a citizen of the United States or an alien lawfully admitted for permanent residence. A person receiving funding under this announcement must be a U.S. Person or the PI must request and receive written permission for such funding from the SSAA Program Director.

Provide a list of non-U.S. Persons, including full name and place of citizenship, that are planned to be supported in this applicant's proposal. Failure to provide this information may result in disqualification of your project application.

APPENDIX 8: OTHER ATTACHMENT

If you need to elaborate on your responses to questions 1-6 on the "Other Project Information" document, please provide the Other Attachment information as an appendix to your project

narrative. Information not easily accessible to a reviewer may be included in this appendix, but do not use this appendix to circumvent the page limitations of the application. Reviewers are not required to consider information in this appendix.

- Do not attach a separate file.
- This appendix will not count in the project narrative page limitation.

LETTERS OF COLLABORATION (IF SELECTED FOR AWARD)
Letters of collaboration for unfunded or funded collaborations are mandatory and must state the intention to participate, but they should not be written as recommendation or endorsement letters, which are not allowed.

Save the **Letters of Collaboration** in a single file named "Collaboration Letters.pdf" and upload to the **Grants.gov R&R Other Project Information** form, which is part of the Application Package in **Grants.gov Workspace**. To attach the Collaboration Letters in PDF format, click the "Add Attachments" button next to item **12 Other Attachments** of the **R&R Other Project Information** form in **Grants.gov Workspace**

DATA MANAGEMENT PLAN (IF SELECTED FOR AWARD)
An applicant who's Full Application is selected for award will be required to submit a Data Management Plan within ninety (90) days of the award notification. The Data Management Plan is a document that outlines the proposed plan for data sharing or preservation. Instructions for submission of this plan will be identified in your award notification.

ENVIRONMENTAL QUESTIONNAIRE (IF SELECTED FOR AWARD)
All NNSA grants must comply with the National Environment Policy Act (NEPA) compliance requirements. An applicant whose Full Application is selected for award negotiations will be required to submit a Financial Assistance Environmental Checklist during the award negotiations phase. All activities – including those conducted by the awardee, sub-awardees, and any other parties – proposed to be funded under the financial assistance award must be described in a single Financial Assistance Environmental Checklist provided in Attachment D (Microsoft Word document) to this announcement in accordance with the instructions contained within the form and Interim Requirements for Completion of Key Sections of the Financial Assistance NEPA Checklist.

3. Research And Related Budget

A. SF424 RESEARCH AND RELATED (R&R) BUDGET AND INFORMATION
The R&R Budget Form is part of the Application Package that must be completed in **Grants.gov Workspace**. The special instructions for completing this form follow:

Applicant must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. Applicant must complete all the mandatory information on the form before the NEXT PERIOD button is activated. Applicant 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

announcement (See Section IV.H). Categories in the Research and Related Budget include:

Section A: Senior/Key Personnel
Section B: Other Personnel
Section C: Equipment Description
Section D: Travel
Section E: Participant/Trainee Costs
Section F: Other Direct Costs
Section G: Direct Costs
Section H: Indirect Costs
Section I: Total Direct and Indirect Costs

Applicant can hover over the specific fields within the form to view instructions for completing the fields.

Additional information is found in Section VIII of this NOFO.

B. BUDGET JUSTIFICATION (FIELD L ON THE FORM)
A Budget Justification Summary workbook is included as **Attachment C** to this announcement for use and to describe the level of detail required in the budget justification. Although the data requested is mandatory, the use of the budget justification workbook is not but the budget justification must contain the level of detail in the form.

Within the **Attachment C** Budget Justification Summary form, there are several tabs to complete including the Equipment Estimates Summary, Travel Summary, and Materials and Supplies Summary. If funding is requested on the R&R Budget form for equipment, travel, or materials and supplies, these tabs must be completed with the requested information.

- **Equipment Summary Estimates tab**
  If funds are requested for equipment, this form is mandatory and must be completed. Equipment defined as tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the applicant's institution for financial statement purposes, or $5,000 must be identified in the Equipment Estimate Summary tab within the Budget Justification form. Please follow the instructions on the form. Quotations must be provided to support the requested funding.

- **Travel Estimates Summary tab**
  If funds are requested for travel, this form is mandatory and must be completed. Applicant must include travel each year to the Annual SSAP Symposium (assume locations Washington, DC in years 1 and 3 and Albuquerque, NM in year 2). PIs, or their representative, will be required to give a brief overview of accomplishments. The website address for the institution's travel policy must be provided in the budget justification.

  Information for all travel, including foreign travel must be provided. All requests for foreign travel during performance of an awarded grant not initially provided with your application,

must be submitted in advance in writing, to the Grants Officer for approval, and must include the travel dates, location (including any personal travel during the trip), purpose, justification and cost.

- **Materials and Supplies Summary tab**
  If funds are requested for materials and supplies, this form is mandatory and must be completed. Please follow the instructions for completing the Materials and Supplies Summary form. Material & Supplies with an Aggregate Total (the grand total of all Materials and Supplies for the entire project period of performance) exceeding $3,000 requires source documents (vendor quote, quote from internet market research) to be provided if selected for award.

Instructions for attaching Budget Justification to the R&R Budget:
For the Applicant, to attach the completed Budget Justification Summary, click "**Add Attachment**" in **Field L – Budget Justification** of the **Research and Related Budget** form in **Grants.gov Workspace**.

Additional information is found in Section VIII of this NOFO.

C. GOVERNMENT APPROVED INDIRECT RATES AND COST ALLOCATIONS
If a Negotiated Rate Agreement with Government approved Indirect Rates and Cost Allocations Agreement has been executed with a Governmental cognizant agency, upload the Agreement to the Grants.gov Workspace Attachment form (see instructions on next page). If a Negotiated Rate Agreement does not exist, provide supporting documentation for proposed indirect rates.

The Negotiated Rate Agreement attachment must be uploaded in PDF format to the **Grants.gov R&R Other Project Information** form, which is part of the Application Package in **Grants.gov Workspace**. To attach the Negotiated Indirect Rate Agreement, click the "Add Attachments" button next to item **12 Other Attachments** of the **R&R Other Project Information** form in **Grants.gov Workspace**.

4. R&R Subaward Budget Attachment(s) Form

Budgets for Subawards: You must provide a separate R&R budget **and** budget justification for each subrecipient. Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET ATTACHMENT(S) FORM and either email it to each subrecipient that is required to submit a separate budget or use the collaborative features of Workspace. After the subrecipient has either emailed its completed budget back to you or completed it within Workspace, attach it to one of the blocks provided on the form. Use up to 10 letters of the subrecipient's name (plus.pdf) as the file name (e.g., ucla.pdf or energyres.pdf). Filenames must not exceed 50 characters.

If the project involves more subrecipients than there are places in the SUBAWARD BUDGET ATTACHMENT(S) FORM, the additional subaward budgets may be saved as PDF files and appended to the Budget Justification attached to Field L.

Ensure that any files received from subrecipients are the PDF files extracted from the SUBAWARD BUDGET ATTACHMENT(S) FORM. Errors will be created if a subrecipient sends a prime applicant a budget form that was not extracted from the application package.

5. Project/Performance Site Location(s)

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.

6. Certification Regarding Lobbying or Disclosure of Lobbying Activities

a. Certification Regarding Lobbying Form
Prime Recipients and Subawardees may not use any Federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Complete the "Certification Regarding Lobbying" form to certify that no appropriated funds have been used for lobbying activities. This form is part of the Application Package that should be completed in Grants.gov Workspace

b. Disclosure of Lobbying Activities Form (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/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

7. Summary of Required Forms/Files

Your application must include the following items:

Name of Document	Format	Special Instructions
Pre-Application		**You must have submitted a pre-application and received notice to submit a full application.**
SF 424 (R&R)	Form	
Research & Related Other Project Information	Form	
Project/Performance Site Location(s)	Form	

Certification Regarding Lobbying, if applicable	Form	Submit either Certification Regarding Lobbying form or the Disclosure of Lobbying form, whichever is applicable.
SF-LLL Disclosure of Lobbying Activities, if applicable	Form	Submit either Certification Regarding Lobbying form or the Disclosure of Lobbying form, whichever is applicable.
Project Summary/Abstract	PDF	See Attachment A sample template. No more than 2 pages, include • the name of the applicant, • the project director/principal investigator(s), • the project title, • the objectives of the project, • a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects), and • milestones listed by year
Project Narrative, including required cover and appendices A 1 – Bio sketches (2 page limit) A 2 – Current and Pending Support A 3 – Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers A 4 – Bibliography & References Cited A 5 – Facilities & Other Resources A 6 – Equipment A 7 – Non-U.S. Citizen Support List	PDF	See Attachment B sample template. No more than 35 pages excluding appendices, follow instructions for cover and content.
Research & Related Budget	Form	
Government Approved Indirect Rates and Cost Allocations		Submit for both Prime and any subawardees
Budget Justification	Excel	See Excel form – Attachment C.
Collaboration Letters	PDF	
Subaward Budget Attachment Form (if proposing subawards)	Form	
Subaward R&R Budget Form (if proposing subawards)	Form	
Subaward Budget Justification (if proposing subawards)	Excel	See excel form - Attachment C.

E. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

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

- 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

F. SUBMISSION DATES AND TIMES

1. Letter of Intent Due Date

No LOI is requested.

2. Pre-application Due Date

The pre-application due date is printed on the cover of this NOFO.

3. Application Due Date

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

You are encouraged to transmit your application well before the deadline. Applications may be submitted at any time between the publication of this NOFO and the stated deadline.

Section V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE/NNSA will perform an initial review to determine that (1) the applicant is eligible for the award; (2) the information required by the NOFO, including pre-application has been submitted; (3) all mandatory requirements are satisfied; (4) the proposed project is responsive to the objectives of the NOFO, and (5) the proposed project is not duplicative of programmatic work. Applications that fail to pass the initial review will not be forwarded for merit review and will be eliminated from further consideration.

2. Merit Review Criteria

All applications passing the initial compliance review and meeting the requirements of the solicitation will be evaluated. The evaluation criteria are based on three factors:

Significance: The extent to which the application if successfully carried out, will make an original and/or important contribution to the area of technical scope addressed and to supporting the objectives of the SSAA Program.

Approach: The extent to which the Center, as proposed, meets the intent of a successful Center of Excellence. The concept, design, methods, analyses, management strategy, and investigator roles and relationships are properly established or developed, well-integrated, and appropriate.

Feasibility: The likelihood that the goals of the proposed Center will be successfully accomplished by the investigators and/or technical staff, given their experience and expertise, past accomplishments, resources available or proposed, institutional commitment, developed or proposed partnerships, and access to technologies.

The merit review will consist of a Technical Evaluation and a Management Evaluation, which are of equal importance. The Technical Evaluation Criteria are listed below, in order of importance.

> Criterion a) Scientific/technical merit of the application, including innovativeness, originality, and its expected impact and relevance to the areas of both technical scope addressed and to Defense Programs. The application successfully details the scientific challenges that will be addressed and how the multi-investigator, multi-institutional team will be able to more efficiently and effectively address the challenges as a team. (Weight: 40%, Addresses Factor: Significance)
>
> Criterion b) Scientific/technical soundness and quality of the proposed method/approach, and the feasibility/likelihood of accomplishment of the stated program. Appropriateness of the proposed method or approach and its consistency with the objective of the SSAA

Program to focus on advanced experimental investigations. (Weight: 20%; Addresses Factor: Approach)

Criterion c) Reasonable and cost-effective use of the facilities and resources requested, those which the applicant proposes to make available, and/or the accessibility of the resources needed to achieve the proposed program objectives. (Weight: 20%; Addresses Factors: Approach and Feasibility)

Criterion d) Qualifications, past scientific and technical achievements of the Principal Investigator(s) and the other key personnel in the area of technical scope addressed. (Weight: 20%; Addresses Factor: Feasibility)

The Management Evaluation Criteria are listed below, and are of equal importance:

Criterion a) The application presents a sound organizational and management plan that will result in an effective Center of Excellence to execute the proposed research program, meet the objectives of the SSAA Program, and have relevance to Defense Programs. (Weight: 25%, Addresses Factor: Significance)

Criterion b) The proposed resources will be managed in a balanced, efficient, and cost-effective manner (scientific staff, students, experimental and computational resources, etc.) so that the proposed Center of Excellence is successful and the objectives of the SSAA Program are met. The application presents a sound plan for access and use of needed experimental resources or facility time. The application presents detailed justification and a sound, cost-effective plan for any equipment and/or construction investment necessary for the Center to achieve its scientific goals. The Center has a plan to establish an effective Center Scientific Advisory Committee to advise the Center. (Weight: 25%, Addresses Factor: Approach)

Criterion c) The Principal Investigator and key personnel have demonstrated the qualifications, experience, and commitment to effectively lead and manage the Center of Excellence. (Weight: 25%, Addresses Factor: Feasibility)

Criterion d) The application presents a sound plan for attracting exceptional graduate students, educating and training students, and insuring that graduate students and post-doctoral research associates are exposed to the research programs and staff at the NNSA National Laboratories. (Weight: 25%, Addresses Factors: Significance, Approach)

The scientific and technical merit and the management and leadership of the Center will be evaluated based on what is proposed within the actual application.

The merit of a proposed project, as determined through the merit review process, is more important to the Government than the estimated costs; however, the Government will not make award where the costs are deemed to outweigh the benefits of a proposed project. The cost-effectiveness of the application will be considered when comparing applications with differing funding requirements.

B. REVIEW AND SELECTION PROCESS

1. Program Policy Factors

The Selection Official may consider any of the following program policy factors in making the selection, listed in no order of significance:

- Availability of funds.
- Relevance of the proposed activity to Defense Programs and SSAA priorities.
- Ensuring an appropriate balance of activities within SSAA programs and the funding distribution between or among the technical scope and topical research areas.
- Performance under current awards.
- Diversity of approach or complementary efforts.
- Training graduate students in conduct of basic research.
- Training the next generation of researchers.
- Providing career pathways for the next generation of researchers.
- Ensuring opportunities to investigators not currently supported by DOE.

2. Selection

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

3. Review of Risk

Pursuant to 2 CFR 200.206, DOE/NNSA will conduct an additional review of the risk posed by applications submitted under this NOFO. 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/NNSA may make use of other publicly available information and the history of an applicant's performance under DOE/NNSA or other Federal agency awards.

Applicants with no prior performance of DOE/NNSA 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.

4. 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

DOE/NNSA anticipates notifying applicants selected for award by the date listed on the cover of this announcement. It is anticipated that awards will have staggered start dates between May 2023 and September 2023.

Section VI – AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

Selected Applicants Notification: DOE/NNSA will notify applicants selected for award. This notice of selection is not an authorization to begin performance. If an application is selected for award by NNSA, the applicant will be notified by the NNSA Contracting Officer.

Non-selected Notification: Organizations whose applications have not been selected will be advised as promptly as possible.

2. Notice of Award

An Assistance Agreement issued by the DOE/NNSA Grants Officer is the authorizing award document. It normally includes, either as an attachment or by reference, the following items: (1) Special Terms and Conditions, (2) Intellectual Property Provisions, (3) Federal Assistance Reporting Checklist and Instructions, (4) Budget Pages, (5) The Research Terms and Conditions, available at https://www.nsf.gov/pubs/policydocs/rtc/rtcoverlay_march17.pdf, and DOE Agency Specific Requirements, available at https://www.nsf.gov/awards/managing/rtc.jsp, (6) Applicable program regulations, 10 CFR 605 at https://www.ecfr.gov/, (7) DOE Assistance Regulations, 2 CFR 200 as amended by 2 CFR 910 at https://www.ecfr.gov/, (8) Application/proposal as approved by DOE, (9) National Policy Assurances to Be Incorporated as Award Terms in effect on date of award at https://www.nsf.gov/awards/managing/rtc.jsp.

TERMS AND CONDITIONS

Sample DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at https://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

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

NATIONAL POLICY ASSURANCES

The National Policy Assurances To Be Incorporated As Award Terms are located at https://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

The following additional policy provisions are applicable to this NOFO. The full text of each provision is in Section VIII of this NOFO and may be accessed by navigating to the hyperlinks below:
1. Evaluation and Administration by Non-Federal Personnel
2. Government Right to Reject or Negotiate
3. Intergovernmental Review
4. Modifications

Awards made under this NOFO are subject to the following Administrative and National Policy Requirements. The full text of each provision is in Section VIII of this NOFO and may be accessed by navigating to the hyperlinks below:
1. Administrative Requirements
2. Availability of Funds
3. Conference Spending (February 2015)
4. Commitment of Public Funds
5. Corporate Felony Conviction and Federal Tax Liability Representations (March 2014)
6. Environmental, Safety and Health (ES&H) Performance of Work at DOE/NNSA Facilities
7. Federal, State, and Local Requirements
8. Funding Restrictions
9. National Environmental Policy Act (NEPA) Compliance
10. Nondisclosure and Confidentiality Agreements Representations (June 2015)
11. Notice Regarding Eligible/Ineligible Activities
12. Prohibition on Discrimination and Harassment
13. Prohibition on Lobbying Activity
14. Proprietary Application Information
15. Publications
16. Registration Requirements
17. Research Misconduct
18. Rights in Technical Data
19. Subaward and Executive Reporting
20. Title to Subject Inventions

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The standard checklist is available at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Forms: Individual awards may impose additional requirements. In addition, all SSAA award recipients should report all Journal Articles and Accepted Manuscripts that have been submitted for publication in a peer-reviewed journal and they must be uploaded to the OSTI (http://www.osti.gov/home/) website within 60 days of acceptance.

D. REPORTING OF MATTERS RELATED TO RECIPIENT INTEGRITY AND PERFORMANCE (DECEMBER 2015)

DOE/NNSA, prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold, is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS) (see 41 USC 2313).

The applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a Federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM.

DOE/NNSA will consider any written comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.206 Federal awarding agency review of risk posed by applicants.

Section VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions relating to the Grants.gov registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@Grants.gov. DOE/NNSA cannot answer these questions. Please only contact the Grants.gov help desk for questions related to Grants.gov.

Questions regarding the specific program areas and technical requirements may be directed to FedConnect at www.FedConnect.net. The technical contacts listed for each program within the NOFO or below will provide answers to questions within FedConnect.

B. AGENCY CONTACTS

Grants.gov Customer Support	800-518-4726 (toll-free) support@Grants.gov
Program Manager Scientific Contact	Robert Spencer 202-586-4971 robert.spencer@nnsa.doe.gov
Program Office Administrative Contact	Terri Stone 301-903-7423 terri.stone@nnsa.doe.gov
Grants Officer	Kristee Hall Kristee.hall@nnsa.doe.gov

Section VIII – SUPPLEMENTARY MATERIAL

A. HOW-TO GUIDES

1. How to Distinguish Between a New and Renewal Application

New Application: An application must be submitted as "new" in the following circumstances:

- When applying for funding to create a new research award that has not previously received DOE/NNSA funding, including any funding for the current year,
- When applying for funding to support continued research from the same applicant institution as the current grant but with a significant change in fundamental nature of the research, or
- When applying for funding to support continued research supported by an existing DOE/NNSA award but at a new applicant institution.

Renewal Application: A renewal application is appropriate when funds are requested for an award that has no changes in the following items:

- The recipient/applicant institution,
- The award's senior leadership, and
- The fundamental nature of the award.

A change in an award's PI does not necessarily require submission as a new application: The change in personnel must be considered in light of other changes.

Renewal applications compete for funds with all other peer-reviewed applications and must be developed as fully as though the applicant were applying for the first time. Renewal applications must be submitted by the same sponsoring institution as that holding the current award for which renewal funding is requested, and the proposed research topic must be logical scientific extensions of the research that has been performed in the current award.

2. How Federally Affiliated Organizations May Participate and Be Funded

Federally Funded Research and Development Centers (FFRDC) (includes DOE/NNSA National Laboratories and other Federal Agency-Sponsored FFRDCs) are not eligible for an award under this announcement. However, FFRDCs may participate as unfunded collaborators in order to:

(1) promote and sustain scientific interactions between the academic community and scientists at the FFRDC Laboratories through exchange of information and/or personnel,
(2) increase the availability of unique experimental facilities sited at the FFRDC Laboratories to the academic community, particularly for collaborations in areas of relevance to stockpile stewardship, and
(3) develop and maintain a long-term recruiting pipeline to the DOE/NNSA FFRDC's by

increasing the visibility of the DOE/NNSA scientific activities to the U.S. faculty and student communities.

FFRDCs are not eligible to receive any direct funding associated with this NOFO, except for reimbursement for use of facilities that require "user fees" in accordance with the institution's written policies or procedures.

3. How Federally Affiliated Organizations May Apply
Federally Affiliated organizations may not apply to this NOFO.

4. How Consortia May be Used
Consortia are not awarded under this NOFO.

5. How to Submit Letters of Intent
Letters of Intent are not required.

6. How to Submit a Pre-Application

The applicant should follow the instructions in the NOFO and submit the pre-application and the original Excel files it used to create its tables via email to Terri Stone (terri.stone@nnsa.doe.gov) by the pre-application due date listed on the cover of this announcement. The subject line of the email should read "SSAA Center Pre-application" followed by the PI's last name and the lead organization name, e.g. "SSAA Center Pre-application: Jones, University of XYZ".

7. How to Register and Submit an Application in Grants.gov

This section provides the application submission and receipt instructions for applications to DOE/NNSA. Please read the following instructions carefully and completely.

ELECTRONIC DELIVERY

DOE/NNSA is participating in the Grants.gov initiative to provide the grant community with a single site to find and apply for grant funding opportunities. DOE/NNSA requires applicants to submit their applications online through Grants.gov.

HOW TO REGISTER TO APPLY THROUGH GRANTS.GOV

a. Instructions: Read the instructions below about registering to apply for DOE/NNSA funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

Organizations must have a Unique Entity Identifier (UEI) Number, active System for Award Management (SAM) registration, and Grants.gov account to apply for grants. If individual

applicants are eligible to apply for this NOFO, then you may begin with step 3, Create a Grants.gov Account, listed below.

Creating a Grants.gov account can be completed online in minutes, but UEI and SAM registrations may take several weeks. Therefore, an organization's registration should be done in sufficient time to ensure it does not impact the entity's ability to meet required application submission deadlines.

Complete organization registration instructions can be found on Grants.gov here: https://www.Grants.gov/web/grants/applicants/organization-registration.html

1) *Obtain a UEI Number*: All entities applying for funding, including renewal funding, must have a Unique Entity Identifier (UEI) number. Applicants must enter the UEI Number in the data entry field labeled "UEI Number" on the SF-424 form. For more detailed instructions for obtaining an UEI Number, refer to: https://www.sam.gov

2) *Register with SAM*: All organizations applying online through Grants.gov must register with SAM at https://www.sam.gov. Failure to register with SAM will prevent your organization from applying through Grants.gov. SAM registration must be renewed annually. For more detailed instructions for registering with SAM, refer to: https://www.Grants.gov/web/grants/applicants/organization-registration/step-2-register-with-sam.html

3) *Create a Grants.gov Account*: The next step is to register an account with Grants.gov. Follow the on-screen instructions or refer to the detailed instructions here: https://www.Grants.gov/web/grants/applicants/registration.html

4) *Add a Profile to a Grants.gov Account*: A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the UEI Number for the organization in the UEI field while adding a profile. For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.Grants.gov/web/grants/applicants/registration/add-profile.html

5) *EBiz POC Authorized Profile Roles*: After you register with Grants.gov and create an Organization Applicant Profile, the organization applicant's request for Grants.gov roles and access is sent to the Electronic Business Point of Contact (EBiz POC). The EBiz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the Authorized Organization Representative (AOR) role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been assigned the AOR role. For more detailed instructions about creating a profile on Grants.gov, refer to: https://www.Grants.gov/web/grants/applicants/registration/authorize-roles.html

6) *Track Role Status*: To track your role request, refer to: https://www.Grants.gov/web/grants/applicants/registration/track-role-status.html

b. *Electronic Signature*: When applications are submitted through Grants.gov, the name of the organization applicant with the AOR role that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC **must** authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role; **this step is often missed and it is crucial for valid and timely submissions.**

HOW TO SUBMIT AN APPLICATION VIA GRANTS.GOV

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each NOFO, you can create individual instances of a workspace.

Below is an overview of applying on Grants.gov. For access to complete instructions on how to apply for opportunities, refer to:
https://www.Grants.gov/web/grants/applicants/apply-for-grants.html

1) Create a Workspace: Creating a workspace allows you to complete it online and route it through your organization for review before submitting.

2) Complete a Workspace: Add participants to the workspace, complete all the required forms, and check for errors before submission.

a. Adobe Reader: If you decide not to apply by filling out webforms you can download individual PDF forms in Workspace so that they will appear similar to other Standard forms. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed through Adobe Reader.

NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at:
https://www.Grants.gov/web/grants/applicants/adobe-software-compatibility.html

b. Mandatory Fields in Forms: In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.

c. Complete SF-424 Fields First: The forms are designed to fill in common required fields across other forms, such as the applicant name, address, and UEI number. To trigger this feature, an applicant must complete the SF-424 information first. Once it is completed, the information will transfer to the other forms.

3) Submit a Workspace: An application may be submitted through workspace by clicking the

Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package *at least 24-48 hours prior to the close date* to provide you with time to correct any potential technical issues that may disrupt the application submission.

4) Track a Workspace: After successfully submitting a workspace package, a Grants.gov Tracking Number (GRANTXXXXXXXX) is automatically assigned to the package. The number will be listed on the Confirmation page that is generated after submission.

For additional training resources, including video tutorials, refer to:
https://www.Grants.gov/web/grants/applicants/applicant-training.html

Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800-518-4726 and email at support@Grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant you are applying for.

If you are experiencing difficulties with your submission, it is best to call the Grants.gov Support Center and get a ticket number. The Support Center ticket number will assist DOE with tracking your issue and understanding background information on the issue.

TIMELY RECEIPT REQUIREMENTS AND PROOF OF TIMELY SUBMISSION

Proof of timely submission is automatically recorded by Grants.gov. An electronic date/time stamp is generated within the system when the application is successfully received by Grants.gov. The applicant AOR will receive an acknowledgement of receipt and a tracking number (GRANTXXXXXXXX) from Grants.gov with the successful transmission of their application. Applicant AORs will also receive the official date/time stamp and Grants.gov Tracking number in an email serving as proof of their timely submission.

When DOE/NNSA successfully retrieves the application from Grants.gov, and acknowledges the download of submissions, Grants.gov will provide an electronic acknowledgment of receipt of the application to the email address of the applicant with the AOR role. Again, proof of timely submission shall be the official date and time that Grants.gov receives your application. Applications received by Grants.gov after the established due date for the program will be considered late and may not be considered for funding by DOE/NNSA.

Applicants using slow internet, such as dial-up connections, should be aware that transmission can take some time before Grants.gov receives your application. Again, Grants.gov will provide either an error or a successfully received transmission in the form of an email sent to the applicant with the AOR role. The Grants.gov Support Center reports that some applicants end the transmission because they think that nothing is occurring during the transmission process. Please be patient and give the system time to process the application.

12. How to Prepare a Data Management Plan

In general, a DMP should address the following requirements:

1. DMPs 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. DMPs 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 in the Office of Science Statement on Digital Data Management (https://science.osti.gov/funding-opportunities/digital-data-management. 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. DMPs 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. In determining the resources available for data management at Office of Science User Facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMP. Information about other Office of Science facilities can be found at https://science.osti.gov/user-facilities/.
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, and regulations. There is no requirement to share proprietary data.

Applicants are encouraged to consult the Office of Science website for further information and suggestions for how to structure a DMP: https://science.osti.gov/funding-opportunities/digital-data-management

13. How to Prepare a Research and Related Budget and Justification

The following advice will improve the accuracy of your budget request:

- Funds requested for personnel (senior, key, and other) must be justified as the product of their effort on the project and their institutional base salary.
- Funds requested for fringe benefits must be calculated as the product of the requested salary and, if present, the negotiated fringe benefit rate contained in an institution's negotiated indirect cost rate agreement.
- Funds requested for indirect costs must be calculated using the correct indirect cost base and the negotiated indirect cost rate.
- You are encouraged to include the rate agreement used in preparing a budget as a part of the budget justification.

- Do not prepare a budget justification using the expired DOE form F4260.1. Use Attachment C – Budget Justification Summary Form. Please submit this document in excel format.

If you are proposing indirect costs and do not already have an Indirect Cost Rate Agreement with your Cognizant Federal Agency or documentation of rates accepted for estimating purposes by DOE/NNSA or another Federal agency, it is recommended that you begin preparing an Indirect Cost Rate Proposal to be submitted, upon request, to the DOE/NNSA contract specialist/grants management specialist who will evaluate your application if you are selected for award.

For your convenience in preparing an Indirect Cost Rate proposal, a link to applicant resources, including indirect rate model templates, has been provided below: https://science.osti.gov/sbir/applicant-resources/grant-application/.

Budget Fields

Section A Senior/Key Person	For each Senior/Key Person, enter the requested information. List personnel, base salary, the number of months that person will be allocated to the project, requested salary, fringe benefits, and the total funds requested for each person. The requested salary must be the product of the base salary and the effort. Include a written narrative in the budget justification that justifies the need for requested personnel. Within the justification, explain the fringe benefit rate used if it is not the standard faculty rate.
Section B Other Personnel	List personnel, the number of months that person will be allocated to the project, requested salary fringe benefits, and the total funds requested for each person. Include a written narrative in the budget justification that fully justifies the need for requested personnel.
Section C Equipment	For the purpose of this budget, equipment is designated as an item of property that has an acquisition cost of $5,000 or more and an expected service life of more than one year, unless a different threshold is specified in a negotiated Facilities and Administrative Cost Rate. (Note that this designation applies for proposal budgeting only and differs from the DOE definition of capital equipment.) List **each** item of equipment separately and justify each in the budget justification section. Do not aggregate items of equipment. Allowable items ordinarily will be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose office equipment is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.
Section D Travel	For purposes of this section only, travel to Canada or to Mexico is considered domestic travel. In the budget justification, list each trip's destination, dates, estimated costs including transportation and subsistence, number of staff traveling, the purpose of the travel, and how it relates to the project. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or

	some other basis). To qualify for support, attendance at meetings or conferences must enhance the investigator's capability to perform the research, plan extensions of it, or disseminate its results. Domestic travel is to be justified separately from foreign travel.
Section E Participant/Trainee Support Costs	If applicable, submit training support costs. Educational projects that intend to support trainees (precollege, college, graduate and post graduate) must list each trainee cost that includes stipend levels and amounts, cost of tuition for each trainee, cost of any travel (provide the same information as needed under the regular travel category), and costs for any related training expenses. Participant costs are those costs associated with conferences, workshops, symposia or institutes and breakout items should indicate the number of participants, cost for each participant, purpose of the conference, dates and places of meetings and any related administrative expenses. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis).
Section F Other Direct Costs	• **Materials and Supplies:** Enter total funds requested for materials and supplies in the appropriate fields. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Publication Costs:** Enter the total publication funds requested. The proposal budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the award. In the budget justification, include supporting information. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Consultant Services:** Enter total funds requested for all consultant services. In the budget justification, identify each consultant, the services he/she will perform, total number of days, travel costs, and total estimated costs. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **ADP/Computer Services:** Enter total funds requested for ADP/Computer Services. Cloud computing costs must be included under this item. The cost of computer services, including computer-based retrieval of scientific, technical and education information may be requested. In the budget justification, include the established computer service rates at the proposing organization if applicable. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Subawards/Consortium/Contractual Costs:** Enter total costs for all subawards/consortium organizations and other contractual costs proposed for the project. In the budget justification, justify

	the details. • **Equipment or Facility Rental/User Fees:** Enter total funds requested for Equipment or Facility Rental/User Fees. In the budget justification, identify each rental/user fee and justify. Indicate the basis for the cost estimate (quotes from vendors or suppliers, past experience of similar items, or some other basis). • **Alterations and Renovations:** Enter total funds requested for Alterations and Renovations. In the budget justification, itemize by category and justify the costs of alterations and renovations, including repairs, painting, removal or installation of partitions, shielding, or air conditioning. Where applicable, provide the square footage and costs. • **Other:** Add text to describe any other Direct Costs not requested above. Enter costs associated with "Other" item(s). Use the budget justification to further itemize and justify.
Section G Direct Costs	This represents Total Direct Costs (Sections A through F)
Section H Other Indirect Costs	Enter the Indirect Cost information, including the rates and bases being used, for each field. Only four general categories of indirect costs are allowed/requested on this form, so please consolidate if needed. Include the cognizant Federal agency and contact information if using a negotiated rate agreement. Within the budget justification, explain the use of multiple rates, if multiple rates are used.
Section I Total Direct and Indirect Costs	This is the total of Sections G and H

14. How to View Applications in PAMS

NNSA does not use PAMS.

15. How to Register in Other Systems Before Submitting an Application

SYSTEMS TO REGISTER IN

Applicants must complete a series of registrations and enrollments to submit applications in response to this NOFO. Applicants not currently registered with SAM and Grants.gov should allow **at least four weeks** to complete these requirements.

You should start the process as soon as possible.

You may not be able to use your preferred Internet browser: Each system has its own requirements.

Applicants must find or request a Unique Entity Identifier (UEI) number at SAM, at www.sam.gov.

Applicants must register with SAM at https://www.sam.gov/. More information about SAM registration for applicants is found at https://www.sam.gov/SAM/transcript/Quick_Guide_for_Grants_Registrations.pdf. SAM maintains a complete user guide at https://www.sam.gov/SAM/transcript/SAM_Non_Federal_User_Guide.pdf.

Applicants must provide a Taxpayer Identification Number (TIN) to complete their registration in www.SAM.gov. An applicant's TIN is an EIN assigned by the Internal Revenue Service (IRS). In limited circumstances, a Social Security Number (SSN) assigned by the Social Security Administration (SSA) may be used as a TIN. You may obtain an EIN from the IRS at https://www.irs.gov/businesses/small-businesses-self-employed/apply-for-an-employer-identification-number-ein-online.

Do not use a SSN as a TIN.
Obtain a TIN from the IRS using the website listed above.

Applicants must register with FedConnect at www.FedConnect.net. The full, binding version of assistance agreements will be posted to FedConnect.

Recipients must register with the Federal Funding Accountability and Transparency Act Subaward Reporting System at https://www.fsrs.gov. This registration must be completed before an award may be made: you are advised to register while preparing your application.

Registering in Grants.gov

Applicants must register with Grants.gov, following the instructions at https://www.Grants.gov/web/grants/applicants/registration.html and described above.

Where to Submit an Application

You must submit the application through Grants.gov at www.Grants.gov, using either the online webforms or downloaded forms, or a system-to-system service

Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@Grants.gov.

Please ensure that you have read the applicable instructions, guides, help notices, frequently asked questions, and other forms of technical support on Grants.gov.

B. POLICY PROVISIONS

1. 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 its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign a conflict of interest agreement and a certificate of confidentiality prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

2. Government Right to Reject or Negotiate

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

3. Intergovernmental Review

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

4. Modifications

Notices of any modifications to this NOFO will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or a NOFO message is posted by registering with FedConnect as an interested party for this NOFO. It is recommended that you register as soon after release of the NOFO as possible to ensure you receive timely notice of any modifications or other NOFOs. More information is available at www.FedConnect.net.

C. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE/NNSA grants and cooperative agreements are contained in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulations).

2. Availability of Funds

Funds are not presently available for this award. The Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the DOE/NNSA Contracting Officer for this award and until the awardee receives notice of such availability, to be confirmed in writing by the DOE/NNSA Contracting Officer.

3. Conference Spending (February 2015)

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant or cooperative agreement 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.

4. Commitment of Public Funds

(a) A DOE/NNSA financial assistance award is valid only if it is in writing and is signed, either in writing or electronically, by a DOE/NNSA Contracting Officer.

(b) Recipients are free to accept or reject the award. A request to draw down DOE/NNSA funds constitutes the Recipient's acceptance of the terms and conditions of this Award.

5. Corporate Felony Conviction and Federal Tax Liability Representations (March 2014)

In submitting an application in response to this NOFO the Applicant represents that:

- It is **not** a corporation that has been 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.

6. Environmental, Safety and Health (ES&H) Performance of Work at DOE/NNSA Facilities

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all state and Federal ES&H regulations, and with all other ES&H requirements of the operator of such site.

Prior to the performance on any work at a DOE-Owned or controlled site, the recipient shall contact the site facility manager for information on DOE and site specific ES&H requirements.

The recipient shall apply this provision to all subrecipients at any tier.

7. Federal, State, and Local Requirements

With respect to the performance of any portion of the work under this award, the recipient agrees to comply with all applicable local, state, and Federal ES&H regulations. The recipient shall apply this provision to all sub awardees at any tier.

8. Funding Restrictions

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

Cost Principles: Costs must be allowable, allocable and reasonable in accordance with the applicable Federal cost principles referenced in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulation).

Pre-award Costs: Recipients may charge to an award resulting from this NOFO 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 referenced in 2 CFR 200 as modified by 2 CFR 910 (DOE Financial Assistance Regulation). Recipients must obtain the prior approval of the DOE/NNSA 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/NNSA 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.

9. National Environmental Policy Act (NEPA) Compliance

If question 4.a. on the "Research and Related Other Project Information" document indicates "potential impact on the environment", or if DOE/NNSA's own review indicates it, DOE/NNSA may ask the applicant to provide additional information on those impacts in order to prepare an environmental critique/synopsis per 10 CFR 1021.216. Note that this pre-award environmental critique/synopsis process would be separate from the preparation of a NEPA document such as an environmental impact statement (EIS) or an environmental assessment (EA). If DOE/NNSA determines the latter documentation is necessary, this process would need to be completed, funded by and with the participation of the awardee, prior to them taking any action on the proposed project that could have adverse environmental effects or that could limit the choice of reasonable alternatives. Note that in most cases, even when "Potential Impact to the Environment" is checked "Yes," preparation of such NEPA documents is rarely necessary, but DOE/NNSA has the expectation that the Applicant will disclose the potential, which would serve to initiate dialog with DOE/NNSA if necessary. The inability to satisfy the NEPA requirements after an award would result in cancellation of the award.

10. Nondisclosure and Confidentiality Agreements Representations (June 2015)

In submitting an application in response to this NOFO 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 contactors 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 applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

c. Notwithstanding 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.

11. 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 which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

12. Prohibition on Discrimination and Harassment

All people conducting, supporting, or participating in scientific research under this award must be able to do so on the basis of their abilities and without any unnecessary barriers. Recipients of awards resulting from this NOFO are prohibited from engaging in discrimination on any basis prohibited by law, including harassment (sexual or non-sexual) as contained in 10 CFR 1040, 1041, and 1042.

Recipients may contact the DOE's Office of Civil Rights for technical assistance in meeting their institutional requirements under these regulations, including assistance in addressing complaints of discrimination or harassment (https://www.energy.gov/diversity/title-ix). The United States Equal Employment Opportunity Commission also makes a number of resources available at https://www.eeoc.gov/eeoc/publications/index.cfm to ensure that employees may perform their work without hindrance. Graduate students and post-doctoral researchers are understood to have a dual role as both trainees and employees, in accordance with 2 CFR 200.400 (f).

13. Prohibition on Lobbying Activity

By accepting funds under this award, you 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 USC 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

14. 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 any document included in the application that contains such proprietary information and specifies the pages of the document which are to be restricted:

"The data contained in pages _____ of this document 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/NNSA 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."

15. Publications

The recipient is expected to publish or otherwise make publicly available the results of the work conducted under any award resulting from this NOFO. Publications and other methods of public communication describing any work based on or developed under an award resulting from this NOFO must contain an acknowledgment of SC support. The format for such acknowledgments is provided at https://science.osti.gov/funding-opportunities/acknowledgements/. The author's copy of any peer-reviewed manuscript accepted for publication must be announced to DOE's Office of Scientific and Technical Information (OSTI) and made publicly available in accordance with the instructions contained in the Reporting Requirements Checklist incorporated in all Assistance Agreements.

16. Registration Requirements

Additional administrative requirements for DOE/NNSA grants and cooperative agreements are contained in 2 CFR 25 (See: www.eCFR.gov). Prime awardees must keep their data in SAM current at www.SAM.gov. Subrecipients at all tiers must obtain UEI numbers and provide the UEI to the prime awardee before the subaward can be issued.

17. Research Misconduct

Scientific discoveries can only take place when scientific research is conducted in a fair, transparent, and honestly reported manner. Any form of dishonesty—whether plagiarism, falsifying results, or misrepresenting conditions—makes it impossible to advance our understanding of the physical universe.

Recipients are "responsible for maintaining the integrity of research of any kind under an award from DOE including the prevention, detection, and remediation of research misconduct, and the conduct of inquiries, investigations, and adjudication of allegations of research misconduct," and conducting appropriate administrative processes in response to allegations of research misconduct in accordance with 2 CFR 910.132. Allegations of any misconduct under an award resulting from this NOFO must be reported to the appropriate institutional officials in accordance with institutional policies against misconduct. Additional information on DOE research

misconduct policies can be found at: https://science.osti.gov/grants/Policy-and-Guidance/Research-Misconduct.

18. Rights in Technical Data

Normally, the government has unlimited rights in technical data created under a DOE/NNSA agreement, including the right to distribute to the public. Delivery or third party licensing of proprietary software or data developed solely at private expense ("Limited Rights Data") 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/NNSA agreement.

If software is specified for delivery to DOE/NNSA, or if other special circumstances exist, e.g., DOE/NNSA specifying "open-source" treatment of software, then the DOE/NNSA Contracting Officer, after negotiation with the recipient, may include in the award special provisions requiring the recipient to obtain written approval of the DOE/NNSA Contracting Officer prior to asserting copyright in the software, modifying the retained Government license, and/or otherwise altering the copyright provisions.

19. Subaward and Executive Reporting

Additional administrative requirements necessary for DOE/NNSA grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR 170. (See: www.eCFR.gov). Prime awardees must register with the new FSRS database at https://www.fsrs.gov and report the required data on their first tier subrecipients. Prime awardees must report the executive compensation for their own executives as part of their registration profile in SAM.

20. Title to Subject Inventions

A primary objective of DOE's multi-billion dollar research, development and demonstration investments is to cultivate new research and development ecosystems, manufacturing capabilities, and supply chains for and by U.S. industry and labor. Therefore, in exchange for receiving taxpayer dollars to support an applicant's project, the applicant must agree to the following U.S. Competitiveness Provision as part of an award under this NOFO.

> U.S. Competitiveness
>
> The Recipient agrees that any products embodying any subject invention or produced through the use of any subject invention will be manufactured substantially in the United States unless the Recipient can show to the satisfaction of DOE that it is not commercially feasible. In the event DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., alternative binding commitments to provide an overall net benefit to the U.S. economy. The Recipient agrees that it will not license, assign or otherwise transfer any subject invention to any entity, at any tier, unless that entity agrees

to these same requirements. Should the Recipient or other such entity receiving rights in the invention(s): (1) undergo a change in ownership amounting to a controlling interest, or (2) sell, assign, or otherwise transfer title or exclusive rights in the invention(s), then the assignment, license, or other transfer of rights in the subject invention(s) is/are suspended until approved in writing by DOE. The Recipient and any successor assignee will convey to DOE, upon written request from DOE, title to any subject invention, upon a breach of this paragraph. The Recipient will include this paragraph in all subawards/contracts, regardless of tier, for experimental, developmental or research work.

Please note that a subject invention is any invention conceived or first actually reduced in performance of work under an award. An invention is any invention or discovery which is or may be patentable. The contractor includes any awardee, recipient, sub-awardee, or sub-recipient.

As noted in the U.S. Competitiveness Provision, at any time in which an entity cannot meet the requirements of the U.S. Competitiveness Provision, the entity may request a modification or waiver of the U.S. Competitiveness Provision. For example, the entity may propose modifying the language of the U.S. Competitiveness Provision in order to change the scope of the requirements or to provide more specifics on the application of the requirements for a particular technology. As another example, the entity may request that the U.S. Competitiveness Provision be waived in lieu of a net benefits statement or U.S. manufacturing plan. The statement or plan would contain specific and enforceable commitments that would be beneficial to the U.S. economy and competitiveness. Examples of such commitments could include manufacturing specific products in the U.S., making a specific investment in a new or existing U.S. manufacturing facility, keeping certain activities based in the U.S. or supporting a certain number of jobs in the U.S. related to the technology. DOE may, in its sole discretion, determine that the proposed modification or waiver promotes commercialization and provides sufficient U.S. economic benefits, and grant the request. If granted, DOE will modify the award terms and conditions for the requesting entity accordingly.