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WASHINGTON, DC 20546-0001

RESEARCH OPPORTUNITIES IN AERONAUTICS – 2024  
(ROA- 2024)

NASA RESEARCH ANNOUNCEMENT (NRA): NNH24ZEA001N

SOLICITING BASIC AND APPLIED RESEARCH PROPOSALS

Assistance Listing Number:43.002

ISSUED: January 01, 2024

PROPOSALS DUE

STARTING NO EARLIER THAN January 01, 2024

THROUGH NO LATER THAN June 31, 2025

OMB Control Number: 2700-0092

2024 ARMD NOFO

## RESEARCH OPPORTUNITIES IN AERONAUTICS (ROA) – 2024

### EXECUTIVE SUMMARY

This NASA Research Announcement (NRA), entitled *RESEARCH OPPORTUNITIES IN AERONAUTICS (ROA) – 2024*, solicits foundational and system-level research in support of the Aeronautics Research Mission Directorate (ARMD), National Aeronautics and Space Administration (NASA). This NRA covers a variety of topics in aeronautics fundamental research that are being pursued by NASA personnel. Specific research thrusts are outlined in the Appendices. A major focus of this NRA is to encourage collaboration between other organizations and NASA to help advance ARMD strategic goals. Details for award scope are provided for each project task area listed in the Appendices. Awards will be made as grants, cooperative agreements, or contracts, depending on the nature of the work proposed. It is anticipated that the majority of awards will be cooperative agreements or grants due to the expected collaborative nature of the work specified in the technical appendices. *NASA Proposer's guide Responding to a NASA Funding Announcement* (hereafter referred to as the *NASA Proposer's guide* found at <https://www.nasa.gov/wp-content/uploads/2023/09/2023-nasa-proposers-guide-final.pdf>) provides a discussion regarding funding mechanisms. The typical period of performance for an award is three years, although a few programs may specify shorter or longer (maximum of five years) periods. Note that it is generally NASA's policy to conduct research with non-U.S. organizations based on no exchange of funds. Details of the solicited program elements along with any changes or modifications to any of these guidelines will be specified in the descriptions in the Appendices of this solicitation. Proposal due dates are given in Tables 5 and 6 which are located at the end of this NRA.

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# RESEARCH OPPORTUNITIES IN AERONAUTICS (ROA) –2024

## SUMMARY OF SOLICITATION

### I. FUNDING OPPORTUNITY DESCRIPTION

#### (a) Strategic Goals of NASA’s Research Program

The National Aeronautics and Space Administration’s (NASA) Mission,

*“Lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and bring new knowledge and opportunities back to Earth, support growth of the Nation’s economy in space and aeronautics, increase understanding of the universe and our place in it, work with industry to improve America’s aerospace technologies, and advance American leadership.”*

draws support from NASA’s world-class capability for aeronautical research founded on a tradition of expertise in aeronautical engineering and core research areas. The Aeronautics Research Mission Directorate (ARMD) contributes to NASA Strategic Goal 3: Address national challenges and catalyze economic growth. The Strategic Objective (3.2) of ARMD to meet this Goal is to “Transform aviation through revolutionary technology research, development and transfer”. To help achieve this objective, NASA Aeronautics maintains and advances U.S. global leadership in aviation through applications of new concepts and technologies pioneered by NASA and developed in partnership with U.S. Industry that led to transformative improvements in mobility, efficiency, and safety.

In addition, the ARMD research plans directly support the National Aeronautics Research & Development (R&D) Policy and accompanying Executive Order 13419 signed by the President on December 20, 2006, and the National Plan for Aeronautics R&D and Related Infrastructure that was released in December 2007 and updated in February 2010. A Technical Appendix to the National Plan was approved on December 22, 2008, and contains additional technical content on Aeronautics R&D goals and objectives and a preliminary assessment of current relevant Federal Aeronautics R&D activities. Specifically, ARMD conducts high-quality, cutting-edge research that includes foundational research across a breadth of core aeronautics competencies that supports aeronautics and space exploration activities; research in key areas related to the development of advanced aircraft technologies and systems, including those related to aircraft safety, environmental compatibility, and fuel efficiency; systems-level technology assessments in relevant environments; and research that supports the Next Generation Air Transportation System (NextGen) in partnership with the Federal Aviation Administration. In addition, ARMD is pursuing a coordinated approach to managing the Nation’s research, development, test, and evaluation (RDT&E) infrastructure with other agencies, particularly the DOD. Additional information about ARMD can be found at <https://www.nasa.gov/aeroresearch>

An important goal of the ARMD NRA is to generate knowledge that can benefit the Nation. Therefore, it is expected that award recipients will publish their work and will utilize peer-reviewed publications to the greatest practical extent.

Further valuable, in-depth insight into NASA's strategic plan and supporting aeronautical research areas may be found in the updated *2023 NASA Strategic Implementation Plan* available at

<https://www.nasa.gov/wp-content/uploads/2021/04/sip-2023-final-508.pdf>

The NASA strategic goals from *the 2023 NASA Strategic Implementation Plan* are shown in Table 1.

(b) NASA's Aeronautics Research Mission Directorate Programs

NASA Aeronautics guides its research efforts using a strategic vision that consists of Mega-Drivers which address research needs within three overarching trends affecting future aviation. Within these Mega-Drivers, ARMD research focuses on six strategic thrust areas that align to be responsive to a growing demand for mobility, severe challenges to sustainability of energy and the environment, and technological advances in information, communications, and automation technologies. These Mega-Drivers and Strategic Thrusts areas are shown in Tables 3 and 4 and can also be found in more detail at <https://www.nasa.gov/aeroresearch>

ARMD addresses the above objectives in four programs: The Advanced Air Vehicles Program, the Airspace Operations and Safety Program, the Integrated Aviation Systems Program, and the Transformative Aeronautics Concepts Program. The Advanced Air Vehicles Program (AAVP) conducts cutting-edge research that will generate innovative concepts, technologies, capabilities, and knowledge to enable revolutionary advances for a wide range of air vehicles. The Airspace Operations and Safety Program (AOSP) performs revolutionary research and technology development to enable the transformation of the National Airspace System (NAS) to safely accommodate a growing number of diverse new vehicles, operational concepts and missions. The Integrated Aviation Systems Program (IASP) conducts research on promising concepts and technologies at an integrated system level, with a focus on flight research and demonstrations. The Transformative Aeronautics Concepts Program (TACP) cultivates multi-disciplinary, revolutionary concepts to enable aviation transformation and harnesses convergence in aeronautics and non-aeronautics technologies to create new opportunities in aviation. The goal of TACP is to knock down technical barriers and infuse concepts into all six ARMD strategic thrusts.

Appendices A-D provide a detailed description for each of the research programs listed above. Each of these appendices is prefaced with an Overview section that provides an introduction to the research program content that all interested applicants to this NRA are encouraged to read. Proposals in response to this NRA should be submitted to the most relevant aeronautics program elements described in Appendices A-D (see also the *Table*

of Contents that prefaces this NRA). Table 5 lists these programs in the order of their calendar deadlines for the submission of proposals, while Table 6 lists them in the order in which they appear in the appendices of this NRA. Questions about each specific program should be directed to the Program Officer(s) identified in the *Summary of Key Information* subsection that concludes each program description.

These appendices also provide clarifications or modifications, if any, to the general guidelines contained in this *Summary of Solicitation* for the individual program elements.

(c) References to Unique NASA Capabilities

NASA's Aeronautics Research Mission Directorate uses a variety of specialized test and high-end computational facilities to achieve its mission. Any need for these specific facilities for the proposed research must be explicitly described in the proposal, including the asset, rationale, and justification of the need, how it supports the investigation, and when during the proposed period the resource will be required. Proposals selected for funding will be considered for an allocation of the requested NASA resources needed for their investigation, but availability of the resource to support the fully requested level cannot be guaranteed.

(d) NASA Safety Policy

Safety is the freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. NASA's safety priority is to protect the public, astronauts and pilots, the NASA workforce (including employees working under NASA award instruments), and high-value equipment and property.

(e) Availability of Funds for Awards

There is no funding associated with this umbrella solicitation. All funding will be associated with the relevant Appendix. The Government's ability to make awards is contingent upon the availability of appropriated funds and the receipt of proposals that NASA determines are acceptable for award under this solicitation.

(f) Proposal Submission

The electronic proposal must be submitted in its entirety by 5:00 p.m. Eastern Time on the appropriate proposal due date.



## II. FEDERAL AWARD INFORMATION

For Award information regarding available funding, number of awards, performance period, due dates, and type of award - Refer to the Summary of Key Information in the relevant Appendix.

### (a) Funding and Award Policies

The Summary of Key Information section in each Appendix provides the anticipated total amount of funds available, any funding limitations and potential number of proposal awards for each topic area. While the Summary of Key Information provides estimates for funding and the number of awards, these amounts may vary depending on the merit of proposals submitted and the funding available at the time of selections.

Any deviation from the usual maximum duration for awards of three years will also be noted (some programs may specify only one year for activities of limited scope to a maximum of five years for extensive, comprehensive studies).

ARMD's goal is to initiate new awards as quickly as possible after the selection of proposals is announced. However, NASA may take longer to make the awards, based on workload, availability of appropriated funds, and any necessary post-selection negotiations with the proposing organizations. To help expedite the processing of awards, proposers are reminded to submit all required information, including full and detailed explanations for the requested budget.

Awards made through this NRA will be in the form of grants, cooperative agreements, or contracts depending on the nature of the work proposed. The type of award to be offered to selected proposers will generally follow the policies in the *NASA Proposer's guide*, although in a few cases only one type of award may be offered as specified in the individual appendices.

In cases where an appendix indicates the possibility of multiple award instrument types, a NASA official will determine the appropriate award instrument for the resulting selections.

As applicable, grants and cooperative agreements will be subject to the provisions of 2 CFR 200, 2 CFR 1800 and the Grant and Cooperative Agreement Manual (GCAM) (all found at <https://www.nasa.gov/offices/procurement/gpc>). Contract awards will be subject to the provisions of the Federal Acquisition Regulations (FAR) and the NASA FAR Supplement <https://www.hq.nasa.gov/office/procurement/regs/NFS.pdf>. Depending upon the Technical, Scientific and Research requirements (i.e., by Project or Thrust Area) ARMD may make Multiple Year Awards under this NRA. Multiple Year Awards will be managed in accordance with *NASA Proposer's guide*.

### (b) Successor Proposals and Resubmissions

Generally, recipients holding previous awards selected through any of the programs offered through earlier NRAs are welcome to submit "successor" proposals that seek to continue a previously funded line of research (see *NASA Proposer's guide*). However, in

order to ensure equitable treatment of all submitted proposals, NASA does not extend any special consideration to such successor proposals in terms of preferential handling, review, or priority for selection. Note that the instructions regarding successor proposals in the *NASA Proposer's guide* may have changed from past years. Proposers are strongly encouraged to review them.

Applicable proposals that were submitted but not selected for any previous NASA solicitation(s) may be submitted either in a revised or original form. Such submissions will be treated as a new proposal and will be subjected to a full peer review.

Funds provided as a result of instruments awarded under this NRA cannot be applied as contributions under Space Act Agreements that NASA may execute in support of related programs.

(c) Increasing Access to the Results of Federally Funded Research

As a Federal Agency, NASA requires prompt public disclosure of the results of its sponsored research to generate knowledge that benefits the Nation. Thus, it is NASA's intent that all knowledge developed under awards resulting from this solicitation be shared broadly. In keeping with the *NASA Plan: Increasing Access to the Results of Scientific Research* <https://www.nasa.gov/aeroresearch> new terms and conditions about making manuscripts and data publicly accessible may be attached to awards that derive from this ROA. All proposals to ROA-2024 must include a data management plan (DMP) or a statement that one is not necessary given the nature of the work proposed. The kind of data that requires a DMP is described in the *NASA Plan: Increasing Access to the Results of Scientific Research* and in the ROA-2024 General Q&A. Also see *NASA Proposer's guide*.

The individual appendices of this ROA may give specific information concerning data archiving and management for those research elements, so please read the individual program solicitations carefully. Unless otherwise stated in individual appendices, the requirement for a DMP supersedes the data sharing plan mentioned in the *NASA Proposer's guide*.

Award recipients will be required to ensure that any Final Peer-Reviewed Manuscripts are submitted for inclusion into NASA PubSpace. This requirement should be completed within one year from the publication by a journal. NASA's instructions for completing the submission process are available at <http://sti.nasa.gov/submit-to-pubspace> (scroll down for instructions for "External NASA Grantees, Contractors and Cooperative Agreement Holders," the external submission link, and "Additional Help" links).

(d) Intellectual Property and Data Resulting from Awards

Ownership of subject inventions is governed by the authorities listed below:

- Domestic small businesses and nonprofits (including educational institutions): Pursuant to the terms and conditions of the Bayh-Dole Act (35 U.S.C. Section 200, et seq.), domestic small businesses and nonprofits (including educational institutions) may elect to retain title to their subject inventions.
- Large Businesses and all others: Pursuant to the terms and conditions of Section 20135 of the National Aeronautics and Space Act (51 U.S.C. § 20135(b)), title to subject inventions vests in the U.S. Government. Large business and all others not subject to the Bayh-Dole Act, do not have an automatic right to elect to retain title to their subject inventions; however, they may request a waiver under the NASA Patent Waiver Regulations, 14 CFR Part 1245, Subpart 1, to obtain title to subject inventions. Such a request may be made in advance of award (or 30 days thereafter) for anticipated subject inventions and/or classes of invention, or within 8 months from the first disclosure of a subject invention to NASA.

Regardless of invention ownership, all awardees are required, under the appropriate patent rights clause, to report inventions made under an award to NASA.

In the case of contract awards, intellectual property provisions (patent and data rights) are subject to the FAR and the NFS. Intellectual property provisions applicable to grants and cooperative agreement awards are subject to the provisions identified in 2 CFR 200 and 2 CFR 1800 as applicable. See also, NASA Proposer's Guide for more information on grant and cooperative agreement awards and intellectual property. The following Table II.d.1 identifies certain specific intellectual property clause references for contracts and grants/cooperative agreements.

**TABLE II.d.1 Intellectual property clause references**

	<b>Small Businesses and Non-Profits (including Educational Institutions)</b>	<b>Large Business and All Others</b>
<b>Contracts</b>	<ul style="list-style-type: none"> <li>• FAR clause 52.227-11 as modified by NFS 1852.227-11 and FAR clause 52.227-14 as modified by NFS 1852.227-14</li> <li>• Offerors shall complete FAR Provision 52.227-15 Representation of Limited Rights Data and Restricted Computer Software and include with proposal.</li> </ul>	<ul style="list-style-type: none"> <li>• NFS clause 1852.227-70 and FAR clause 52.227-14 as modified by NFS 1852.227-14</li> <li>• Offerors shall complete FAR Provision 52.227-15 Representation of Limited Rights Data and Restricted Computer Software and include with proposal.</li> </ul>
<b>Grants/ Cooperative Agreements</b>	GCAM	GCAM

Title and Rights in Intellectual Property. A stated purpose of NASA under the National Aeronautics and Space Act is to seek and encourage the commercial use of space. During negotiations, offerors should identify any barriers that the appropriate set of intellectual property clauses would present to achieving commercialization efforts. Where such barriers have been identified, the parties will use reasonable efforts to negotiate to ensure that commercialization efforts can be realized, consistent with the above applicable authorities.

(e) International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) Requirements

It is incumbent upon the recipient to assure the protection and nondisclosure of relevant technical data, including requirements of the Export Administration Regulations (EAR) and International Traffic in Arms Regulations (ITAR). U.S. recipients are required to know when hardware, software, or related materials and services, including technical data, are subject to U.S. export control laws, including the U.S. Export Administration Act, the Arms Export Control Act, and their associated regulations. It is incumbent upon the U.S. recipients to strictly comply with all U.S. export control laws, and when applicable, assume the responsibility for obtaining export licenses, or other export authority, as may be required.

Under U.S. law and regulations, spacecraft and their specifically designed, modified, or configured systems, components, and parts are generally considered "Defense Articles" on the United States Munitions List and are, therefore, subject to the provisions of the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120-130. It is the recipient's responsibility to determine whether any proposal information is subject to the

provisions of ITAR, and to comply with the provisions of ITAR. Information about U.S. export regulations is available at <http://www.pmddtc.state.gov/> and <http://www.bis.doc.gov/>

(f) Award Reporting Requirements

Required reports for contract awards will be negotiated with the contractor, subject to the terms and conditions of the FAR and NASA FAR Supplement. Required reports for grants and cooperative agreements are covered in 2 CFR 200 (see 2 CFR 200.327-329), the *NASA Proposer's guide*, and Appendix F, "Required Publications and Reports" of the GCAM. Grants and cooperative agreements typically require annual and final technical reports, financial reports, and final technology reports. The reporting requirements in 2 CFR 180.335 and 2 CFR 180.350 are also applicable to awards issued under this NRA.

(g) Environmental Statement

Awards of proposals related to this Notice of Funding opportunity (NOFO) must comply with the National Environmental Policy Act (NEPA); thus, proposers are encouraged to plan and budget for any anticipated environmental impacts. While most research awards will not trigger action-specific NEPA review, some activities (including international actions) will.

The majority of grant-related activities are categorically excluded as research and development (R&D) projects that do not pose any adverse environmental impact. A blanket NASA Grants Record of Environmental Consideration (REC) provides NEPA coverage for these anticipated activities. The NSPIRES award application cover page includes questions to determine whether a specific proposal falls within the Grants REC and must be completed as part of the proposal submission process. Activities outside of the bounding conditions of the Grants REC will require additional NEPA analysis. Examples of actions that will likely require NEPA analysis include but are not limited to suborbital-class flights not conducted by a NASA Program Office, activities involving ground-breaking construction/fieldwork, and certain payload activities such as the use of dropsondes.

Questions concerning environmental compliance may be addressed to the NASA NEPA Manager via the NASA program official listed in the appropriate Appendix.

### III. ELIGIBILITY INFORMATION

#### (a) Eligibility of Applicants

Unless noted otherwise in the relevant appendix, participation in this program is open to all categories of U.S. and non-U.S. organizations, including but not limited to, educational institutions, industry, and not-for-profit institutions. Historically Black Colleges and Universities (HBCUs), Other Minority Universities (OMUs), small disadvantaged businesses (SDBs), veteran-owned small businesses, service-disabled veteran-owned small businesses, HUBZone small businesses, and women-owned small businesses (WOSBs) are encouraged to apply. Except where noted otherwise in individual appendices, participation by eligible non-U.S. organizations in this program is welcome but subject to NASA's policy of no exchange of funds, in which each government supports its own national participants and accounts for associated costs (further information on foreign participation is provided in paragraph (e) below and the *NASA Proposer's guide*).

#### (a i) NASA's Commitment to Diversity and Inclusion

NASA recognizes and supports the benefits of having diverse and inclusive scientific, engineering, and technology communities and fully expects the reflection of such values in the composition of all panels and teams, including peer review panels, proposal teams, science definition teams, and mission and instrument teams. Per Federal statutes and NASA policy, no eligible applicant shall experience exclusion from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NASA on the grounds of their race, color, creed, age, sex, national origin, or disability. NASA welcomes proposals from all qualified and eligible sources, and strongly encourages proposals from Historically Black Colleges and Universities (HBCUs), Minority Serving Institutions (MSIs), small disadvantaged businesses (SDBs), veteran-owned small businesses, service-disabled veteran-owned small businesses (SDVOSB), HUBZone small businesses, and women-owned small businesses (WOSBs), as eligibility requirements apply.

Appendices will identify specific eligibility requirements that apply to that opportunity. Additional information on collaboration opportunities may be found in appendices (A-D). Questions regarding NASA roles under cooperative agreements should be sent to the designated Point of Contact listed in the appropriate technical appendix (A-D).

#### (b) Number of Proposals and Teaming Arrangements

Unless Appendices specify additional information or provide limitations, there is no restriction on the number of proposals that an organization may submit to this solicitation or on the teaming arrangements for any one proposal. However, each proposal must be a separate, stand-alone, complete document for evaluation purposes. The NRA is structured in a way that facilitates responses to individual topic or subtopic areas. However, some program, thrust, or project areas provide special instructions for addressing more than one subtopic in a single proposal. The proposer is responsible for

reviewing any additional information that may be provided in those instructions.

NASA recognizes and supports the benefits of having diverse and inclusive scientific, engineering, and technology communities and fully expects that such values will be reflected in the composition of all panels and teams including peer review panels (science, engineering, and technology), proposal teams, science definition teams, and mission and instrument teams.

(c) Cost Sharing or Matching

For contracts, criteria, and procedures for the allowability and allocability of cash and non-cash contributions shall be governed by FAR Parts 30 and 31, and NFS Parts 1830 and 1831 as they describe the policies and procedures for applying the Cost Accounting Standards and pricing principles.

For an institution of higher education, or other non-profit organization seeking to receive a grant or cooperative agreement, cost-sharing is not required; however, NASA can accept cost sharing if it is voluntarily offered. See 2 CFR 200.306 and 2 CFR 1800.306 for more information on cost sharing.

(d) Other Eligibility Criteria

Proposing to more than one Appendix simultaneously or with overlapping timeframes is permitted, provided the proposed efforts are appropriate for the solicitations and the recipient can carry out all proposed efforts, if selected. Appendices may also identify other eligibility restrictions such as limitations on the number of proposals that a PI or key participant may submit.

Ineligibility of Proposals That Include Participation of China or Chinese-Owned Companies

Proposals involving bilateral participation, collaboration, or coordination in any way with China or any Chinese-owned company, whether funded or performed under a no-exchange-of-funds basis, shall be ineligible for award.

(e) Foreign Participation

Participation by eligible non-U.S. organizations is also permitted, but subject to NASA's policy of no-exchange-of-funds, in which each government supports its own national participants and accounts for associated costs (further information on foreign participation is provided in NASA Proposer's guide). NASA's policy is to conduct research with foreign entities on a cooperative, no-exchange-of-funds basis (see NPD 1360.2B, Initiation and Development of International Cooperation in Space and Aeronautics Programs, <http://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=1360&s=2B>). Should a foreign proposal or a U.S. proposal with foreign participation be selected, NASA's Office of

International and Interagency Relations will arrange with the sponsoring foreign agency or funding/sponsoring institution for the proposed participation on a no-exchange-of-funds basis, in which NASA and the non-U.S. sponsoring agency or funding/sponsoring institution will each bear the cost of discharging their respective responsibilities.

For grants and cooperative agreements, NASA policy on research with foreign organizations is covered in 2 CFR 1800.3.

For contracts, NASA policy on research with foreign organizations is covered in paragraph (l) Additional Guidelines Applicable to Foreign Proposals and Proposals Including Foreign Participation of NFS provision 1852.235-72, Instructions for Responding to NASA Research Announcements  
(<https://www.hq.nasa.gov/office/procurement/regs/NFS.pdf>)

(f) China Funding Restriction

Proposals must not include bilateral participation, collaboration, or coordination with China or any Chinese-owned company or entity, whether funded or performed under a no-exchange-of funds arrangement. As stated in the GCAM Section 5.4, NASA requires Certifications, Assurances, and Representations, including Certifications and Assurances to implement restrictions in Appropriation Acts, that are applicable to all awards. By submission of a proposal, proposers are certifying that the proposing organization has read and is in compliance with all the Certifications, Assurances, and Representations.

NASA anticipates this restriction will be contained in future appropriation acts. Active Procurement Class Deviation (PCD) 12-01A instructs Contracting Officers to add certification NFS 1852.225-72 entitled “Restriction on Funding Activity with China – Representation” as well as NFS clause 1852.225-71 entitled “Restriction on Funding Activity with China” in all contract awards.



#### IV. APPLICATION AND SUBMISSION INFORMATION

##### (a) Address to Request Application Package and Proposal Instructions

All information needed to respond to this solicitation is contained in this ROA NRA and in the latest edition of the companion document, the NASA Proposer's guide, located at

<https://www.nasa.gov/wp-content/uploads/2023/09/2023-nasa-proposers-guide-final.pdf>

and proposers are responsible for understanding and complying with its procedures for the successful, timely preparation and submission of their proposals. Proposals that do not conform to its standards may be declared noncompliant and rejected without review. Where this solicitation and the NASA Proposer's guide are in conflict, this solicitation takes precedence. In addition, the provisions in any Appendix will apply to that specific opportunity and will supersede any conflicting provisions in this solicitation or in the NASA Proposer's guide.

The introductory material, as well as the appendices, of the NASA Proposer's guide provide additional information about the entire NRA process, including NASA policies for the solicitation of proposals, guidelines for writing complete and effective proposals, and NASA's general policies and procedures for the review and selection of proposals and for issuing and managing the awards to the institutions that submitted selected proposals.

Questions regarding this NRA or its program elements should be directed to the cognizant Program official listed in the program element's description. Clarifications or questions and answers will be posted on the relevant program element(s)'s web page(s).

A group of Frequently Asked Questions provides additional miscellaneous information about a variety of the NASA proposal and award processes, policies, and procedures. The Frequently Asked Questions with general applicability to the majority or all of the solicitation are posted on the ARMD ROA page on NSPIRES. In addition, each Project or program Element may post additional *Frequently Asked Questions* in their respective pages on NSPIRES.

##### (b) Content and Form of the Proposal Submission

###### (i) Electronic Proposal Submission

All proposals submitted in response to this solicitation must be submitted in electronic form by the AOR at the proposal principal investigator's (PIs) organization who is authorized to make such a submission; electronic submission of the proposal by the AOR serves as the required original signature by an authorized official of the proposing organization. No hard copy of the proposal will be accepted.

Appendices to this solicitation will indicate whether proposers may submit proposals via one or both of the electronic proposal submission systems: NSPIRES (<http://nspires.nasaprs.com>) or via Grants.gov <http://www.grants.gov> Offerors submitting through Grants.gov must register in NSPIRES in order for proposals to be transferred by NASA to the NSPIRES system for review.

NSPIRES will provide a list of all elements that make up an electronic proposal, and the system will conduct an element check to identify any item(s) that is (are) apparently missing or incomplete. Proposers are encouraged to begin their submission process early. Tutorials and other NSPIRES help topics may be accessed through the NSPIRES online help site at <http://nspires.nasaprs.com/external/help.do>. For any questions that cannot be resolved with the available on-line help menus, requests for assistance may be directed by E-mail to [nspires-help@nasaprs.com](mailto:nspires-help@nasaprs.com) or by telephone to (202) 479-9376, Monday through Friday, 8:00 a.m. – 6:00 p.m. Eastern Time.

The proposal submission process is complex and involves multiple steps to be carried out by all participants in the proposal. Therefore, offerors are strongly encouraged to familiarize themselves with the system and begin the submittal process early, well in advance of the deadline. While every effort is made to ensure the reliability and accessibility of submission systems and to provide a help center via e-mail and telephone, difficulties may arise at any point, including the user's own equipment. Difficulty in registering or using proposal submission systems (either NSPIRES or Grants.gov) is not a sufficient reason for NASA to consider a proposal submitted after the deadline. It is especially important to note that every individual named on the proposal's electronic Cover Page form (see below) as a proposing team member in any role, including co-investigators and collaborators, must be registered in NSPIRES and that such individuals must perform this registration themselves; no one may register a second party, even the Principal Investigator of a proposal in which that person is committed to participate. This data site is secure, and all information entered is strictly for NASA's use only.

Any organization requesting NASA funds through the proposed project must be listed on the Proposal Cover Page. NASA will not fund organizations that do not appear on the Proposal Cover Page.

- Each individual team member (e.g., PI, co-investigators, collaborators), including all personnel named on the proposal's electronic cover page, must be individually registered and affiliated with their organization in NSPIRES. This registration requirement applies equally for proposals submitted via Grants.gov. Such individuals must perform the registration themselves; no one may register a second party, not even the PI of the proposal on which that person is committed to participate. Proposals that are submitted through Grants.gov may be deemed non-compliant and rejected without review if the above NSPIRES registration requirements are not completed prior to the proposal submission deadline identified in the relevant Appendix.
- Each individual team member (e.g., PI, co-investigators, collaborators), including all personnel named on the proposal's electronic cover page, must specify an organizational affiliation. The organizational affiliation specified on the cover page must be the organization through which the team member would work and receive funding while participating in the proposed effort. If the individual has multiple affiliations, then this organization may be different from the individual's primary employer or preferred mailing address. Team members are asked to

ensure that their contact information in NSPIRES is up-to-date. Changes can be made using the "Account Management" link on the "NSPIRES Options" page.

- Submission of proposals via either NSPIRES or Grants.gov requires action by both the PI and the AOR. First, the PI must complete all required electronic forms, and upload the required PDF file(s). Second, the AOR must submit the electronic proposal on behalf of the PI. Coordination between the PI and his/her AOR on the final editing and submission of the proposal materials is facilitated through their respective accounts in NSPIRES and/or Grants.gov. Note that if one individual is acting in both the PI and AOR roles, he/she must ensure that all steps in the process are taken, including submitting the proposal from the organization.
- Offerors should be sure to allow adequate time for coordination between the PI and AOR. Depending on the organization and its internal review process, this can take several days. The PIs are encouraged to begin this coordination at the outset of the proposal preparation.

All team members identified on the NSPIRES proposal cover page may indicate their commitment to the proposed work via NSPIRES.

All proposals submitted via NSPIRES in response to this NRA must include a required electronic Cover Page form that is accessed at <http://nspires.nasaprs.com>. This form is comprised of several distinct sections: a Cover Page that contains the identifier information for the proposing institution and personnel; a Proposal Summary that provides an overview of the proposed investigation that is suitable for release through a publicly accessible archive should the proposal be selected; and a Budget Summary of the proposed research effort. Unless specified in the program description itself, no other forms are required for proposal submission via NSPIRES. See the NASA Proposer's guide.

The required elements of the proposal, including the science/technical/management section, must be submitted as one or more PDF documents that are attached to the Cover Page using the tools in NSPIRES. It is possible that the complete proposal is submitted as a single, searchable, unlocked PDF document, that contains the complete proposal, including the science/ technical/ management plan and Budget Narrative and Budget Details (but not the Total Budget), assembled in the order provided in the NASA Proposer's guide and uploaded using the tools in NSPIRES.

The Total Budget must be uploaded as a separate attachment in a file named "totalbudget.pdf". One advantage of submitting the proposal as one PDF document as described above is that it is easier for the proposer to create a table of contents that will be correct. If separate files are uploaded, there may be slight differences in page numbering due to the concatenation process. Any mismatch with the table of contents caused by this process does not impact the evaluation of the proposal.

For proposals submitted through Grants.gov, instructions for NASA-specific forms and NASA program-specific forms may be found in the application package. For

any questions that cannot be resolved with the available on-line help menus and documentation, requests for assistance may be directed by E-mail to support@grants.gov or by telephone to (800) 518-4726, twenty-four hours a day, seven days a week, except Federal holidays when the support center is closed.

(ii) Proposal Format and Contents

All proposals submitted in response to this NRA must include the appropriate required electronic forms available through either of two proposal submission systems, NSPIRES or Grants.gov.

The required sections of the proposal must be submitted as one searchable, unlocked PDF file that is attached to the electronic submission using one of the proposal submission systems. Offerors must comply with the format and page limit requirements specified in the Appendices. The provisions in each Appendix will apply to that specific opportunity and will supersede any conflicting provisions in this solicitation.

Important note on creating PDF files for upload: It is essential that all PDF files generated and submitted by the offeror meet NASA requirements. This will ensure that the submitted files can be ingested by NSPIRES regardless of whether the proposal is submitted via NSPIRES or Grants.gov. At a minimum, it is the responsibility of the offerors to: (1) ensure that all PDF files are unlocked and that edit permission is enabled – this is necessary to allow NSPIRES to concatenate submitted files into a single PDF document; and (2) ensure that all fonts are embedded in the PDF file and that only Type 1 or TrueType fonts are used. In addition, any offeror who creates files using TeX or LaTeX is required to first create a DVI file and then convert the DVI file to Postscript and then to PDF. See [http://nspires.nasaprs.com/tutorials/PDF\\_Guidelines.pdf](http://nspires.nasaprs.com/tutorials/PDF_Guidelines.pdf) for more information on creating PDF documents that are compliant with NSPIRES. PDF files that do not meet NASA requirements shall be declared noncompliant and not submitted to peer review for evaluation.

It is each offeror's responsibility to verify the accuracy and completeness of his/her proposal, including all text, figures, tables, and required forms. NSPIRES allows applicants to verify before submission that all information contained in proposal PDF file(s) being provided to NSPIRES is complete and accurate.

There is a 20 MB file size limit for proposals of the NASA Proposer's guide. In order to meet the 20 MB file size limit, you should crop and compress any embedded photos and graphic files to an appropriate size and resolution. Only attachments that are specifically requested either in this solicitation or in Appendices to this solicitation should be submitted.

Note that some of the program elements in the Appendices of this NRA may specify different page limits for the main body of the proposal; if so, these page limits will be

prominently given in the *Summary of Key Information* subsection that concludes each program element description. In the event the information in this NRA is different from or contradictory to the information in the *NASA Proposer's guide*, the information in this NRA takes precedence.

A detailed Work Plan delineating how the Recipient/Awardee will accomplish the Goals and Objectives of the proposed Program, Thrust or Project Area (including applied Research Methodologies, Processes, and Resources, etc.) shall be included as part of the proposal. For entities seeking contracts, a Statement of Work (SOW) should be included as part of the proposal for the award of a contract. The SOW should include the following in the order listed: (1) Scope (2) Objectives (3) SOW tasks organized in a Work Breakdown Structure (WBS) (4) Program Schedule & Milestones (5) Measurable metrics, and (6) deliverables, which should be defined and described under the applicable task / WBS portion of the SOW. The SOW does not count against the page limit and should be inserted at the end of the proposal.

(iii) Budget Format

Both electronic systems require budget figures on the Proposal Cover Page. Offerors need to include budget figures for all years of the proposed project on the Proposal Cover Page including subawards. Offerors should refer to section NASA Proposer's guide and additional budget instructions provided in the relevant Appendix.

The uniform policy concerning the review of proposals submitted in response to this ROA NRA against the cost evaluation criterion is described in Appendix D of the *NASA Proposer's guide*. Peer reviewers will provide input on cost realism and cost reasonableness to ensure that the proposed technical work is feasible. NASA program personnel will conduct the complete evaluation of cost the proposed technical work is feasible. NASA program personnel will conduct the complete evaluation of cost including cost realism, cost reasonableness, total cost, and comparison of the proposed cost to available funds.

In order to allow this division of review responsibilities, NASA will provide limited but sufficient proposal budget information to the peer review (work effort and personnel, other direct costs including procurements and sub-awards/subcontracts) while reserving certain proposal budget details for NASA's use (costs of direct labor, indirect costs, total costs).

In addition to the budget summary information provided in the NSPIRES or Grants.gov Cover Page forms, all proposers are required to include more detailed budgets and budget justifications, including detailed subcontract/sub-award budgets. For this NRA, this additional budget must be divided into three parts: the "Budget Justification: Narrative"; the "Budget Details," both as described in NASA Proposer's guide; and the "Total Budget," a requirement specific to this ROA NRA.

The Budget Narrative includes the description of facilities and equipment, as well as the rationale and basis of estimate for all components of cost including procurements,

travel (destination, purpose and number of travelers), publication costs, and all sub-awards/subcontracts.

The Budget Details must include the detailed proposed budget including all of the Other Direct Costs and Other Applicable Costs specified in the NASA Proposer's guide. For this NRA, the Budget Narrative and the Budget Justification: Details should not specify the cost of Direct Labor or any Administrative Costs (e.g., overhead).

While the appropriate award instrument will be determined by the Government for appendices with multiple potential award instrument types, offerors must indicate the assumed type of award used during budget preparation. If a contract is assumed, offerors must indicate the type of contract proposed (i.e., cost plus fixed fee, cost sharing, fixed price, etc.). Note that some topics described in Appendices A-E may specify an expected award type.

The Total Budget file must specify the complete set of cost components including all costs discussed in the Budget Narrative and Budget Details, as well as the Total Estimated Cost, cost of Direct Labor, and Administrative Costs (overhead). The Total Budget document will not be provided to the non-government peer review but will be used by NASA in the evaluation of total cost and comparison of the proposed cost to available funds. Proposers may also choose to include any data they consider to be sensitive financial information in the Total Budget file required by this Section of the ROA NRA. However, if any such information is excluded from the Budget Narrative and Budget Details sections, a note should be included in the applicable section of the Budget Narrative or Budget Details section to clarify where the information is located in the Total Budget file.

The required Budget Narrative and Budget Details section of the proposal may be incorporated into the proposal document as these will be provided to the peer review (for submission via NSPIRES, the Budget Narrative and Budget Details must be incorporated into the single proposal PDF file). Regardless of whether the proposal is submitted via NSPIRES or Grants.gov, proposers to the ROA must provide the Total Budget in a file called "totalbudget.pdf," which is uploaded as a separate attachment in either NSPIRES or Grants.gov.

(iv) Table of Personnel and Work Effort

The Table of Personnel and Work Effort must include the names and/or titles of all personnel (including postdoctoral fellows and graduate students) necessary to perform the proposed investigation regardless of whether these individuals require funding from the current proposal. The number of person-months each person is expected to devote to the project must be given for each year.

(v) Notice of Intent to Propose

Appendices will indicate whether a notice of intent (NOI) to propose is required, requested, or not requested for a particular opportunity. The information contained in an NOI is used to expedite the proposal review activities and is, therefore, of value to both NASA and the offeror. To be of maximum value, NOIs should be submitted to NSPIRES by the date given in each Appendix. Note that NOIs may be submitted within NSPIRES directly by the PI; no action by an organization's AOR is required to submit an NOI.

Within NSPIRES, space is provided for the PI to provide the following information:

- A short title of the anticipated proposal.
- A full title of the anticipated proposal (which should not exceed 254 characters and is of a nature that is understandable by a scientifically trained person).
- A brief description of the primary research area(s) and objective(s) of the anticipated investigation.
- The names of any Co-Investigators and/or Collaborators as may be known by the time the NOI is submitted. In order to enter such names, such team members must have previously accessed and registered in NSPIRES themselves; a PI cannot do this for them.

Grants.gov does not provide NOI capability; therefore, NOIs must be submitted via NSPIRES regardless of whether the proposal will be submitted via NSPIRES or Grants.gov. Interested proposers must register with NSPIRES before it can be accessed for use; see Section IV (b) (i) above. Since NOIs submitted after the deadline may still be useful to NASA, late NOIs may be submitted by E-mail as directed in *NASA Proposer's guide*.

For most of the programs advertised through this solicitation, a brief Notice of Intent (NOI) to propose is encouraged, but not required, for the submission of proposals to this solicitation. The information contained in an NOI is used to help expedite the proposal review activities and, therefore, is of considerable value to both NASA and the proposer. To be of maximum value, NOIs should be submitted by the proposal principal investigator to NSPIRES, NASA's master proposal data system located at <http://nspires.nasaprs.com>, by the dates given in Tables 5 or 6 below for each program in the Appendices. Note that NOIs may be submitted within NSPIRES directly by the proposal principal investigator; no action by an organization's AOR is required to submit an NOI.

(vi) Conflict of Interest Check Information

In order to ensure that all proposal evaluations are conducted as fairly as possible, it is important to ascertain whether prospective reviewers may have conflicts of interest that might affect their capacity to function with impartiality. To facilitate the process of identifying potential conflicts of interest, it is necessary to collect information about the organizations participating in each proposal. A NASA program-specific form will be used to collect this information. This form will be part of a submission to the NSPIRES system. Proposers using Grants.gov will have to ensure that they complete the NASA program-specific form as described in section I (b) (iii). Failure to submit this form via the NSPIRES system shall result in the proposal being deemed nonresponsive to the NRA.

(c) Data Management Plan (DMP)

All proposals submitted under this Notice of Funding Opportunity (NOFO) are required to submit a Data Management Plan (DMP) in accordance with the *NASA Plan for Increasing Access to the Results of Scientific Research* located at [http://www.nasa.gov/sites/default/files/files/NASA\\_Data\\_Plan.pdf](http://www.nasa.gov/sites/default/files/files/NASA_Data_Plan.pdf).

(d) Unique Entity Identifier UEI) and system for award management (SAM)

Each applicant for NASA funding (unless the applicant is an individual or is excluded per 2 CFR 25.110) is required to:

- Be registered in SAM before submitting an application
- Maintain an active SAM registration with current information, including information on a recipient's immediate and highest-level owner and subsidiaries, as well as on all predecessors that have been awarded a Federal contract or grant within the last three years, if applicable, for all times during which it has an active Federal award or an application or plan under consideration by NASA; and
- Provide its UEI in each application or plan it submits to NASA. UEIs may be obtained by registering in SAM.gov

NASA may not issue an award or financial modification to an existing award to an applicant or recipient entity until the entity has complied with the requirements to provide a valid UEI and maintain an active SAM registration with current information. At the time of issuing an award, if the intended recipient has not complied with the UEI or SAM requirements, NASA may determine that the applicant is not qualified to receive an award and use that determination as a basis for making an award to another applicant.



(e) Registration

In order to submit a proposal, all team members and their institutions must be registered in NASA's proposal data system: NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) (<http://nspires.nasaprs.com>). Therefore, every organization that intends to submit a proposal to NASA in response to this solicitation, whether submitting through Grants.gov or the NSPIRES system must also be registered in NSPIRES. Every organization that intends to submit a proposal through Grants.gov must be registered in both Grants.gov and NSPIRES.

Details of the multi-step registration process for Grants.gov, which takes 3 business days (or up to four weeks if all steps are not completed in a timely manner) to register a new institution, are described in the Applicant FAQs (<https://www.grants.gov/web/grants/applicants/applicant-faqs.html>)

Registration in NSPIRES cannot be accomplished until each applicable institution obtains a Unique Entity Identifier (UEI) and registers in the System for Award Management (SAM). Once the UEI and SAM steps are complete, the institutions and each team member shall then register with NSPIRES and with Grants.gov, if that submission process will be used.

Registration in NSPIRES is required in order to complete transfer of the Grants.gov proposal to NASA for review. Linking a team member's registration with their institution will automatically associate all required information (UEI, CAGE, EIN) with the proposal.

Registration for either proposal submittal system must be performed by an organization's Authorized Organizational Representative (AOR). To identify the AOR, the PI should contact his or her Sponsored Research Office (SRO) or Electronic Business Point of Contact (E-Biz POC). The NSPIRES Help Desk can also determine who the AOR is from the SAM system. If an institution is not registered in the SAM database, then the point of contact from the Office of Sponsored Research or the E-Biz POC shall register it on the SAM webpage [sam.gov](http://sam.gov)

(f) Proposal Submission Method, Dates, Time, and Location

For each program in Appendices A through D of this NRA, the electronic proposal must be submitted in its entirety by 5:00 p.m. Eastern Time on the appropriate proposal due date given in Tables 5 or 6 below. All proposals must be submitted electronically using NSPIRES or Grants.gov (see Section IV (b) above).

Proposals that are late will be handled in accordance with NASA's policy as given in the *NASA Proposer's guide* and returned without review. If a late proposal is returned, it is entirely at the discretion of the proposer whether or not to resubmit it in response to a subsequent appropriate solicitation.

All proposals must be received by the established deadline.

Applicants experiencing technical problems outside of their control must notify NASA as soon as possible and before the application deadline. Failure to timely notify NASA of the issue that prevented the timely filing of the application may preclude consideration of the award.

(g) Funding Restrictions

In addition to the funding restrictions and requirements given in the NASA *Proposer's guide* and the GCAM, the following restrictions are applicable to this ROA NRA. All costs charged to awards covered by this NOFO must comply with the Uniform Administrative Requirements in 2 C.F.R. 200 and 1800, unless otherwise indicated in the NOFO, the terms and conditions of the award, and the [Grants and Cooperative Agreement Manual \(GCAM\)](#)

- All proposed funds must be allowable, allocable, and reasonable. Funds may only be used for the project. All activities charged under indirect cost must be allowed under 2 CFR 200 cost principles.
- Grants and cooperative agreements shall not provide for the payment of fee or profit to the recipient.
- Unless otherwise directed in 2 CFR 200, for changes to the negotiated indirect cost rate that occur throughout the project period, the recipient must apply the rate negotiated for that year, whether higher or lower than at the time the budget and application was awarded.
- Proposals must not include bilateral participation, collaboration, or coordination with China or any Chinese-owned company or entity, whether funded or performed under a no-exchange-of-funds basis.
- Any funds used for match or cost sharing must be allowable under 2 CFR 200.
- The non-Federal entity must use one of the methods of procurement as prescribed in 2 CFR 200.320, Methods of procurement to be followed.
- This clause is applicable to Fellowship and Scholarship programs only: Awards made under NASA Fellowship and Scholarship funding opportunities shall not provide for the payment of Facilities and Administration, overhead, or indirect costs per the definition of “modified total direct cost” in 2 CFR 200.1, Definitions.
- The estimated funding and number of proposals anticipated to be funded, as shown in the *Summary of Key Information* at the end of each program element, are subject to the availability of appropriated funds, as well as the submission of a sufficient number of proposals of adequate merit.

Direct Cost Limitation

- The construction of facilities is not an allowed activity for any of the programs solicited in this NRA unless specifically stated. For further information on the allowability of costs, refer to the cost principles cited in 2 CFR 200 Subpart E.
- Typically travel, including foreign travel, is allowed as may be necessary for the

meaningful completion of the proposed investigation, as well as for publicizing its results at appropriate professional meetings.

- Profit for commercial organizations is not allowable under grant or cooperative agreement awards but is allowable under contract awards. Costs for managing the project may be allowed under grant or cooperative agreement awards. These costs, whether direct charges or part of the indirect cost agreement, must be consistent with 2 CFR 200 Subpart E
- U.S. research award recipients may directly purchase supplies and/or services from non-U.S. sources that do not constitute research, but award funds may not be used to fund research carried out by non-U.S. organizations. However, subject to export control restrictions, a foreign national may receive remuneration through a NASA award for the conduct of research while employed either full or part time by a U.S. organization of the *NASA Proposer's guide*.

#### Pre-Award Costs

Pre-award costs are not allowable.

#### (h) Other Submission Requirements

All information needed to respond to this solicitation is contained in this ROA NRA and in the latest edition of the companion document, the NASA Proposer's guide, located at <https://www.nasa.gov/wp-content/uploads/2023/09/2023-nasa-proposers-guide-final.pdf> and proposers are responsible for understanding and complying with its procedures for the successful, timely preparation and submission of their proposals.

All proposals submitted in response to this solicitation must be submitted in electronic form. Appendices to this solicitation will indicate whether proposers may submit proposals via one or both of the electronic proposal submission systems: NSPIRES (<http://nspires.nasaprs.com>) or via Grants.gov <http://www.grants.gov>. Offerors submitting through Grants.gov must register in NSPIRES in order for proposals to be transferred by NASA to the NSPIRES system for review.

#### Collection of Demographic Information

NASA is implementing a process to collect demographic data from grant applicants for the purpose of analyzing demographic differences associated with its award processes. Information collected will include name, gender, race, ethnicity, and disability status. Submission of the information is voluntary and is not a precondition of award.

#### (i) Proposal Requirements for Relevance

Proposals for all NASA sponsored research programs are usually evaluated on three criteria: intrinsic merit, relevance to NASA's objectives, and cost realism and reasonableness (see *NASA Proposer's guide*). These criteria may be modified in the Appendices of this NRA. Each program element includes a specific description of how it is relevant to the NASA Strategic Plan. Therefore, unless otherwise stated in the program element, it is not necessary for individual proposals to show relevance to NASA's

broader goals and objectives. The proposal should instead focus on demonstrating relevance by discussing how the proposed investigation addresses the goals and objectives of the specific program element.

Note that this NRA references the strategic goals and objectives in the 2023 NASA Strategic Plan (see Section I (a) and Table 1).

## V. APPLICATION REVIEW INFORMATION

### (a) Application Evaluation Criteria

Each proposal will be evaluated by peers of the proposing personnel to assess the proposal's intrinsic scientific and technical merit, its relevance to NASA's stated objectives, and its cost realism and reasonableness. The evaluation criteria are:

- 1) Intrinsic Merit of the Proposal
- 2) Relevance to Objectives Stated in ROA 2024
- 3) Cost

The three evaluation factors will be equally weighted. See Appendix D of the *NASA Proposer's guide* for further discussion of these criteria and their relative weights. Some of the projects in the attached Appendices contain additional or tailored evaluation criteria. If any criteria in Appendices A-D conflicts with any other part of the NRA, the criteria identified in the Appendices take precedence over this and other sections of the NRA. The evaluation factors include factors evaluated by peer reviewers, as well as factors evaluated by NASA program personnel. Note the following specific points:

- As evaluation panels review the intrinsic merit of the proposed investigation, they will be asked to consider the realism and reasonableness of the request for unique NASA capabilities and whether it is an appropriate utilization of a highly constrained asset.
- Some of the programs discussed in the Appendices will provide specific factors, based on the solicited research objectives, which will be considered when evaluating a proposal's technical merits and/or its relevance to program objectives.
- As discussed in Section IV (e) above, relevance will be judged in part by the proposal's focus on specific objectives for the ARMD program element.
- Opinions on a proposal's cost may be offered by peer review (for cost realism and cost reasonableness), but NASA personnel will conduct the complete cost evaluation (for cost realism, cost reasonableness, total cost and comparison to available funds). Proposers must follow the budget format requirements in Section IV (b) (iii).
- The selection official may take program balance into account when selecting proposals for funding.
- The Work Plan shall be evaluated in accordance with the requirements set forth in each of the applicable Appendices.
- The specific program element in the Appendices will identify how the DMP will be evaluated, i.e., as part of the peer review or internally by NASA staff.

- Cost sharing is generally not considered as part of the evaluation (see Section III(c) above). However, cost sharing may become a factor at the time of selection when deciding between proposals of otherwise equal technical merits.
- The peer reviewers only have access to the Budget Narrative and Budget Details and will not have access to the Total Estimated Cost, the cost of Direct Labor, and Administrative Costs (e.g., overhead). Therefore, failure to provide sufficient budget justification and data in the Budget Narrative, Budget Details and the Table of Personnel and Work Effort, will prevent the peer review from appropriately evaluating the cost realism of the proposal. A finding by the peer review of “insufficient information to properly evaluate cost realism” will be considered a weakness of the proposal. Inconsistent budget information between the budget descriptions will also be considered a weakness of the proposal.

(b) Review and Selection Processes

(i) Proposal Review and Selection

Review of proposals submitted to this NRA will be consistent with the evaluation criteria and the general policies and provisions given in Appendix D of the *NASA Proposer’s guide*.

For grants and cooperative agreement awards, the NASA Grant Officer will conduct a pre-award review of risk associated with the proposer as required by 2 CFR 200.205. For all proposals selected for award, the Grant Officer will review the submitting organization’s information available through the Federal Awardee Performance and Integrity Information System (FAPIIS) and the System for Award Management (SAM) to include checks on entity core data, registration expiration date, active exclusions, and delinquent federal debt.

Unless otherwise specified, the Program Director responsible for a thrust area is the final Selecting Official. In cases where a conflict of interest exists, the Selecting Official will be designated by the Associate Administrator for Aeronautics.

(ii) Review of Applicants in the Federal Awardee Performance and Integrity Information System (FAPIIS)

NASA, prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold (currently \$250,000), is required to review and consider any information about the applicant that is in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System—FAPIIS) accessible through the System for Award Management (SAM), <https://www.sam.gov> (see 41 U.S.C. 2313).

An applicant, at its option, may review information in FAPIIS and comment on any information about itself that NASA previously entered and is currently in FAPIIS. NASA will consider any comments by the applicant, in addition to the other information

in FAPIIS, 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 200.205 Federal awarding agency review of risk posed by applicants.

(iii) Limited Release of Proposers Confidential Business Information

(a) For proposal evaluation and other administrative processing, NASA may find it necessary to release information submitted by the proposer to individuals not employed by NASA. Business information that would ordinarily be entitled to confidential treatment may be included in the information released to these individuals. Accordingly, by submission of this proposal the proposer hereby consents to a limited release of its confidential business information (CBI).

(b) Except where otherwise provided by law, NASA will permit the limited release of CBI only pursuant to non-disclosure agreements signed by the assisting contractor or subcontractor, and their individual employees who may require access to the CBI to perform the assisting contract.

(iv) Risk Analysis

NASA Grant Officers will conduct a pre-award review of risk associated with the proposer as required by 2 CFR 200.206, Federal awarding agency review of risk posed by applicants. For all proposals selected for award, the Grant Officer will review the submitting organization's information available through multiple government-wide repositories such as the System for Award Management (SAM.gov), the Contractor Performance and Assessment Reporting System (CPARS), the Federal Audit Clearinghouse (FAC), USAspending.gov, and Grant Solutions Recipient Insight.

Risk Review

For any Federal award, if NASA anticipates that the total Federal share will be greater than the simplified acquisition threshold (currently \$250,000) over the period of performance:

- i. Prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold, NASA is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (see 41 U.S.C. §2313);
- ii. An 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;

iii. NASA will consider any 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 200.206, Federal awarding agency review of risk posed by applicants.

(c) Partial Awards and Participation with Others

NASA reserves the right to select only a portion of a proposed investigation, usually at a level of support reduced from that requested in the original proposal or may also offer tentative selections in which NASA requests investigators to team in a joint investigation. Additionally, NASA may decide to award an effort for less than the full period of the proposal. In these cases, the proposer will be given the opportunity to accept or decline such selection. If the proposer accepts such an offer, a revised budget and statement of work may be required before funding action on the proposal can be initiated. If the proposer declines the offer of a partial selection, or participation in a joint investigation, the offer of selection may be withdrawn in its entirety by NASA.

(d) Selection Announcement and Federal Award Dates

NASA's stated goal is to announce selections as soon as possible. However, NASA does not usually announce new selections until the funds needed for those awards are approved through the Federal budget process. Therefore, a delay in the budget process for NASA usually results in a delay of the selection date(s). After 150 days past the proposal due date for which a proposal was submitted, proposers may contact the responsible Program Officer listed at the conclusion of that program description in the appendices for the status of the selection activity.

Those proposers not selected will be notified by postal or electronic mail and offered a debriefing consistent with the policy in the *NASA Proposer's guide*.

(e) Process for Appeals

(i) Ombudsman Program

The NASA Procurement Ombudsman Program is available under this NRA as a procedure for addressing concerns and disagreements. The clause at NASA FAR Supplement (NFS) 1852.215-84 ("Ombudsman") is incorporated into this NRA. The cognizant ombudsman is:

Marvin Horne  
Deputy Assistant Administrator for Procurement  
Office of Procurement  
NASA Headquarters  
300 E Street SW Room 5L14  
Washington DC 20546-0001

Telephone: (202) 358-4483  
Email: [agency-procurementombudsman@nasa.gov](mailto:agency-procurementombudsman@nasa.gov)

(ii) Protests

Only prospective offerors proposing to appendices specifying contracts as the anticipated award instrument have the right to file a protest, either at the Government Accountability Office (GAO) or with the Agency, as defined in FAR 33.101. The provisions at FAR 52.233-2 (“Service of Protest”) and NASA FAR Supplement (NFS) 1852.233-70 (“Protests to NASA”) are incorporated into this NRA. Under both of these provisions, the designated official for receipt of protests to the Agency and copies of protests filed with the GAO is:

Marvin Horne  
Deputy Assistant Administrator for Procurement  
Office of Procurement  
NASA Headquarters Mail Stop 5L14  
Washington, DC 20546  
Telephone: 202-358-4483

(iii) Requests for Reconsideration

An offeror whose proposal has been declined may request a debriefing from the Program Officer. Following the debriefing, dissatisfied PIs may submit in writing a Request for Reconsideration to the Selecting Official. Details on this process may be found in Appendix H of the NASA Proposer’s guide.

VI. FEDERAL AWARD ADMINISTRATION INFORMATION

(a) Notice of Award

Notification of both the selected, as well as the non-selected proposers, will be consistent with the guidance given in the *NASA Proposer’s guide* and, for contracts, the Federal Acquisition Regulation and NASA FAR Supplement.

NASA will notify successful grant recipients of funding via a Notice of Award (NASA Form 1687) signed by the Grant Officer. This Notice of Award is the authorizing document and will be sent to the offeror’s business office via electronic delivery. For selected proposers, the offeror’s business office will be contacted by a NASA Awards Officer, who is the only official authorized to obligate the Government. All expenses incurred on grant activities prior to the period of performance start date listed on the Notice of Award are at the risk of the non-Federal entity until the Notice of Award is received and period of performance commences.



## (b) Administrative and National Policy Requirements

In addition to the requirements in this section and in this NOFO, NASA may place specific terms and conditions on individual awards in accordance with 2 C.F.R. Part 200. Recipients of NASA grant funding shall adhere to requirements set forth in 2 CFR 200, 2 CFR 1800, 2 CFR 170, 2 CFR 175, 2 CFR 182, and 2 CFR 183. Throughout the year, NASA may issue policies or guidance by way of a Grant Information Circular (GIC). GICs supplement, clarify, augment, remove, and/or alter information included in NASA grant policies and/or provide other important updates. NASA distributes GICs on the NASA website on the Grants Policy and Compliance [Regulations and Guidance section](#) under Active GICs. Expired GICs are stored on the [GICs Archive webpage](#). GICs supersede the policy document referenced in the circular. As such, NASA grant applicants and recipients should ensure they stay informed by checking NASA's [Grant Regulations and Guidance](#) page for the most up-to-date policies and requirements.

This solicitation does not invoke any special administrative or national policy requirements—2 CFR 200.300, 2 CFR 1800, and the GCAM will apply to any grant and cooperative agreement awards that derive from this NRA, as applicable. All award requirements are posted at:

[https://www.nasa.gov/offices/procurement/gpc/regulations\\_and\\_guidance](https://www.nasa.gov/offices/procurement/gpc/regulations_and_guidance)

Please note that it is expected that proposers will comply with Homeland Security Presidential Directive/ HSPD-12. HSPD-12 applicability will be determined during negotiation for award for selected proposals.

Additionally, award recipients that have individuals working under the award who need access to NASA facilities and/or systems must work with NASA program staff to ensure proper credentialing. Such individuals include U.S. citizens, lawful permanent residents (“green card” holders), and foreign nationals (those who are neither U.S. citizens nor permanent residents).

### Research Terms and Conditions

Awards from this funding announcement that are issued under 2 CFR 1800 are subject to the Federal Research Terms and Conditions (RTC) located at <http://www.nsf.gov/awards/managing/rtc.jsp>. In addition to the RTC and NASA-specific guidance, three companion resources can also be found on the website: Appendix A—Prior Approval Matrix, Appendix B—Subaward Requirements Matrix, and Appendix C—National Policy Requirements Matrix.

### Environmental Statement

Awards of proposals related to this NOFO must comply with the National Environmental Policy Act (NEPA); thus, proposers are encouraged to plan and budget for any anticipated environmental impacts. While most research awards will not trigger action-specific NEPA review, some activities (including international actions) will.

The majority of grant-related activities are categorically excluded as research and development (R&D) projects that do not pose any adverse environmental impact. A blanket NASA Grants Record of Environmental Consideration (REC) provides NEPA coverage for these anticipated activities. The NSPIRES award application cover page includes questions to determine whether a specific proposal falls within the Grants REC and must be completed as part of the proposal submission process. Activities outside of the bounding conditions of the Grants REC will require additional NEPA analysis. Examples of actions that will likely require NEPA analysis include but are not limited to suborbital-class flights not conducted by a NASA Program Office, activities involving ground-breaking construction/fieldwork, and certain payload activities such as the use of dropsondes.

Questions concerning environmental compliance may be addressed to the NASA NEPA Manager via the NASA program official listed in this NOFO.

### (c) Reporting

The reporting requirements for awards made through this NRA will be consistent with the NASA Proposer's guide and the GCAM Appendix F. Any additional requirements will be specified in the program description.

Award recipients may also be subject to reporting requirements under the NASA Plan for Increasing Access to Results of Federally Funded Research. Any such requirements will be identified in the Notice of Award.

Award recipients are subject to additional reporting requirements specified at 2 CFR 200 Appendix XII—Award Term and Condition for Recipient Integrity and Performance Matters, if the total value of the award recipients currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of the Federal award.

([https://www.ecfr.gov/cgi-bin/text-idx?SID=4b63b1740bdb186d3bf5d346f5ddf42c&mc=true&node=ap2.1.200\\_1521.xii&rn=div9](https://www.ecfr.gov/cgi-bin/text-idx?SID=4b63b1740bdb186d3bf5d346f5ddf42c&mc=true&node=ap2.1.200_1521.xii&rn=div9))

### Federal Financial Reporting

Recipients of NASA funding must submit quarterly financial reports. Financial reports must be submitted via the Payment Management System (PMS):

- Quarterly Federal Financial Report1 (FFR), Standard Form 425 due no later than 30 days past the reporting period end date.
- Final Financial Status Reports/Final Federal Financial Report (FSR/FFR) are due no later than 120 days after the end of the period of performance.

### Performance Reporting

Refer to Individual Appendix

For all NASA awards, recipients must utilize the Research Performance Progress

Report (RPPR) format. The RPPR is not a template or form but rather a set of standard data elements against which award recipients will report, and it is not available as a template or form from NASA. All performance reports must contain the mandatory data elements and reporting category required for RPPRs.

All reports shall include the following data elements on the report's cover page:

- Federal agency (i.e., NASA) and program office to which the report is submitted.
- Award number.
- Project title
- Principal Investigator name, title, and contact information (e-mail address and phone number).
- Name of submitting official, title, and contact information (e-mail address and phone number), if other than PI.
- Submission date.
- Unique Entity Identifier (UEI) number and EIN number.
- Recipient organization name and address.
- Recipient identifying number or account number, if any.
- Period of performance start and end date.
- Reporting period end date.
- Report term or frequency (annual, semi-annual, quarterly, other).
- Final Report? Indicate "Yes" or "No"
- Signature of submitting official (either handwritten or electronic)

In addition to the data elements above, all NASA performance reports **shall** report on one mandatory reporting category, "accomplishments."

Accomplishments data element:

1. What were the major goals and objectives of this project?
2. What was accomplished under these goals?
3. What opportunities for training and professional development has the project provided?
4. How were the results disseminated to communities of interest?
5. What do you plan to do during the next reporting period to accomplish the goals and objectives?

For further details on reporting project performance, please refer to the Post-Award Phase Section of the GCAM.

#### Access to Research

Awards issued under this NOFO must comply with the provision set forth in the NASA Plan for Increasing Access to the Results of Scientific Research ([http://www.nasa.gov/sites/default/files/files/NASA\\_Data\\_Plan.pdf](http://www.nasa.gov/sites/default/files/files/NASA_Data_Plan.pdf)) including the responsibility for:

1. Submitting as-accepted peer-reviewed manuscripts and metadata to a designated repository and
2. Reporting publications with the annual and final performance reports.

### Recipient Integrity and Performance Matters

Awards under this solicitation that are \$500,000 or more may be subject to the post award reporting requirements reflected in [2 CFR 200 Appendix XII](#).

### FFATA Reporting Requirements

Per 2 CFR 170, Reporting Subaward and Executive Compensation Information, award recipients that issue first-tier subawards above \$30,000 shall report those subawards in the Federal Award Accountability and Transparency Act (FFATA) Subaward Reporting System (FSRS). 2 CFR 170 provides detailed guidance as to what information needs to be reported in these systems and the deadlines for submitting this information. Recipient information that is reported to FSRS is ultimately transferred to USAspending.gov for public display.

### Suspension and Debarment Disclosure

This reporting requirement pertains to disclosing information related to government-wide suspension and debarment requirements. Before a recipient enters into a grant award with NASA, the recipient must notify NASA if it knows if it or any of the recipient's principals under the award fall under one or more of the four criteria listed at 2 CFR Part 180.335:

- i. Are presently excluded or disqualified;
- ii. Have been convicted within the preceding three years of any of the offenses listed in 2 C.F.R. § 180.800(a) or had a civil judgment rendered against it or any of the recipient's principals for one of those offenses within that time period;
- iii. Are presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses listed in 2 C.F.R. § 180.800(a); or
- iv. Have had one or more public transactions (federal, state, or local) terminated within the preceding three years for cause or default.

At any time after accepting the award, if the recipient learns that it or any of its principals falls under one or more of the criteria listed at 2 C.F.R. § 180.335, the recipient must provide immediate written notice to NASA in accordance with 2 C.F.R. § 180.350.

### Additional Reporting Requirements

NASA recipients must conform to all reporting requirements outlined in the Required Publications and Reports section of the GCAM, currently Appendix F.

## VII. NASA CONTACT INFORMATION

### Contact and Resource Information

Refer to Individual Appendix

### Program Office Contact

Refer to Individual Appendix

Note: Proposals shall be submitted electronically as described in Section IV above.

Specific questions about a given program element in this NRA should only be directed to the Program Officer(s) listed in the *Summary of Key Information* subsection that includes each program description.

No communication concerning this NRA may be made to any other NASA official other than those specifically listed in this NRA.

Inquiries about accessing or using the NASA proposal data base located at <http://nspires.nasaprs.com> should be directed by an E-mail that includes a telephone number to [nspires-help@nasaprs.com](mailto:nspires-help@nasaprs.com) or by calling (202) 479-9376. This help center is staffed Monday through Friday, 8:00 a.m. – 6:00 p.m. Eastern Time.

Inquiries about accessing or using Grants.gov located at <http://www.grants.gov> should be directed by an E-mail to [support@grants.gov](mailto:support@grants.gov) or by calling (800) 518-4726. This customer support contact center is staffed twenty-four hours a day, seven days a week, except Federal holidays when the support center is closed.

General questions about policies of this NRA may be directed to:

Neal Nijhawan  
Integration and Management Office  
Aeronautics Research Mission Directorate  
NASA Headquarters  
E-mail: [NASA-roa@nasa.gov](mailto:NASA-roa@nasa.gov)

## VIII. OTHER INFORMATION

### (a) Announcement of Updates/Amendments to Solicitation

It is possible that additional programmatic information for any of NASA's programs may develop before their proposal due dates. If so, such information will be added as a formal amendment to this NRA as posted at its homepage at <http://nspires.nasaprs.com>. It is the responsibility of the prospective proposer to check this NRA's homepage for updates concerning the program(s) of interest.

Any clarifications or questions and answers that are published will be posted either with

the summary ROA NRA information or on the relevant program element(s)'s web page(s) at <http://nspires.nasaprs.com>.

#### Access to NASA Facilities/Systems

All recipients shall work with NASA project/program staff to ensure proper credentialing for any individuals who need access to NASA facilities and/or systems. Such individuals include U.S. citizens, lawful permanent residents ("green card" holders), and foreign nationals (those who are neither U.S. citizens nor permanent residents).

#### Limited Release of Proposers Confidential Business Information

(i) For proposal evaluation and other administrative processing, NASA may find it necessary to release information submitted by the proposer to individuals not employed by NASA. Business information that would ordinarily be entitled to confidential treatment may be included in the information released to these individuals. Accordingly, by submission of this proposal the proposer hereby consents to a limited release of its confidential business information (CBI).

(ii) Except where otherwise provided by law, NASA will permit the limited release of CBI only pursuant to non-disclosure agreements signed by the assisting contractor or subcontractor, and their individual employees who may require access to the CBI to perform the assisting contract.

#### (b) Electronic Notification of NASA solicitations

NASA Headquarters maintains an electronic notification system to alert interested parties of program announcements. Subscription to this service is free to all registered users of the NASA proposal data base system at <http://nspires.nasaprs.com/>. To add or change a subscription to the electronic notification system, users should login to the data base system and select "Account Management", then "Email Subscriptions."

This e-mail service will notify all subscribers of:

- (1) All NASA Headquarters research program solicitations (within a given Directorate)
- (2) Amendments to those solicitations
- (3) Special information that NASA Headquarters wishes to communicate to those interested in proposing.

Regardless of whether or not this service is used, all NASA Headquarters research announcements and amendments may be accessed at <http://nspires.nasaprs.com/> (select "Solicitations" then "Open Solicitations") as soon as they are posted.

## IX. CONCLUDING STATEMENT

Through this ROA NRA, NASA encourages the participation of the aeronautics communities in its Aeronautics Research Mission Directorate research and technology programs. Comments about this NRA are welcome and may be directed to the point of contact for general questions and comments identified in Section VII above.

Robert A. Pearce  
Associate Administrator  
Aeronautics Research Mission Directorate

Nateri Madavan  
Director  
Advanced Air Vehicles Program

Akbar Sultan  
Director  
Airspace Operations and Safety Program

Lee Noble  
Director  
Integrated Aviation Systems Program

John Cavolowsky  
Director  
Transformative Aeronautics Concepts Program

TABLE 1. NASA STRATEGIC GOALS

Strategic Goal 1:	Expand human knowledge through new scientific discoveries.
Strategic Goal 2:	Extend human presence to the moon and on to Mars for sustainable long-term exploration, development and utilization.
Strategic Goal 3:	Catalyze Economic Growth and Drive Innovation to Address National Challenges.
Strategic Goal 4:	Enhance Capabilities and Operations to Catalyze Current and Future Mission Success

TABLE 2. NASA’s ARMD Goals, Objectives, Performance Goals

Strategic Goal 3: Address national challenges and catalyze economic growth
Objective 3.2: Transform aviation through revolutionary technology research, development, and transfer.
<ul style="list-style-type: none"> <li>○ <i>Performance Goal 3.2.1: Develop solutions that will enable the integration of a diverse range of non-traditional vehicles and operations into the National Airspace System by means of scalable, service-orientated architecture.</i></li> <li>○ <i>Performance Goal 3.2.2: Demonstrate the ability to reduce the perceived loudness of sonic booms and enable future industry innovation in commercial supersonic aircraft.</i></li> <li>○ <i>Performance Goal 3.2.3: Advance airframe and engine technologies to enable the development of future generations of ultra efficient air vehicles that minimize environmental impact including electric aircraft propulsion concepts.</i></li> <li>○ <i>Performance Goal 3.2.4: Advance airframe and propulsion technologies to enable the development of vertical take-off and landing (VTOL) vehicles that minimize noise and maximize safety.</i></li> <li>○ <i>Performance Goal 3.2.5: Define and demonstrate solutions that predict, identify, and mitigate emerging safety risks and address the national need to safely transform the National Airspace System.</i></li> <li>○ <i>Performance Goal 3.2.6: Contribute toward the safe introduction of on-demand Urban Air Mobility (UAM) and other emerging operations by developing, applying, demonstrating, and validating advanced autonomy and automation technologies and providing methods or research results that support certification of autonomous systems.</i></li> </ul>

The Updated 2023 NASA Strategic Plan, available at <https://www.nasa.gov/wp-content/uploads/2021/04/sip-2023-final-508.pdf>



TABLE 3. ARMD MEGA- DRIVERS

Mega- Driver 1:	Global Growth in Demand for Ever Faster Mobility
Mega- Driver 2:	Sustainability, Affordability, and Environmentally-Friendly Energy Use
Mega- Driver 3:	Technology Convergence

TABLE 4. ARMD STRATEGIC RESEARCH THRUSTS

Strategic Thrust 1:	Safe, Efficient Growth in Global Operations
Strategic Thrust 2:	Innovation in Commercial High-Speed Aircraft
Strategic Thrust 3:	Ultra-Efficient Subsonic Transports
Strategic Thrust 4:	Safe, Quiet, and Affordable Vertical Lift Air Vehicles
Strategic Thrust 5:	In-Time System-Wide Safety Assurance
Strategic Thrust 6:	Assured Autonomy for Aviation Transformation

TABLE 5. SOLICITED RESEARCH PROGRAMS (IN ORDER OF PROPOSAL DUE DATES)

APPENDIX	PROGRAM	NOI DUE DATE	PROPOSAL DUE DATE
A.8	Advanced Air Vehicles Program (AAVP) Fellowship Opportunities	N/A	April 30, 2024, 5 PM ET
D.4	University Leadership Initiative (ULI)	May 29, 2024, 5 PM ET See note 1	See note 2
A.4	Commercial Supersonic Technology (CST)	N/A	May 31, 2024, 5PM ET
D. 5	University Student Research Challenge (USRC)	n/a	See note 3

Note: It is expected that additional project areas will be added in future amendments.

Notes:

1. University Leadership Initiative will use a 2-step proposal process. Step-A proposals are required, in place of the Notice of Intent (NOI) and are due 05/29/2024, 5PM ET.
2. University Leadership Initiative will use a 2-step proposal process. Step-B proposals will be due 60 days after the notification for Step-B proposals is issued.
3. University Student Research Challenge (USRC) will evaluate all proposals submitted to date in three cycles: Cycle One Due Date is November 7, 2024; Cycle Two Due Date is March 13, 2025; Cycle Three Due Date is June 26, 2025.

TABLE 6: SOLICITED RESEARCH PROGRAMS (IN ORDER OF APPENDICES A–D)

APPENDIX	PROGRAM	NOI DUE DATE	PROPOSAL DUE DATE
A.4	Commercial Supersonic Technology (CST)	N/A	May 31, 2024, 5PM ET
A.8	Advanced Air Vehicles Program (AAVP) Fellowship Opportunities	N/A	April 30, 2024, 5 PM ET
D.4	University Leadership Initiative (ULI)	May 29, 2024, 5 PM ET	See note 2

		See note 1	
D. 5	University Student Research Challenge (USRC)	n/a	See note 3

Notes:

1. University Leadership Initiative will use a 2-step proposal process. Step-A proposals are required, in place of the Notice of Intent (NOI) and are due 05/29/2024, 5PM ET.
2. University Leadership Initiative will use a 2-step proposal process. Step-B proposals will be due 60 days after the notification for Step-B proposals is issued.
3. University Student Research Challenge (USRC) will evaluate all proposals submitted to date in three cycles: Cycle One Due Date is November 7, 2024; Cycle Two Due Date is March 13, 2025; Cycle Three Due Date is June 26, 2025.

