

APPENDIX H

(Minority University Research and Education Project) for Sustainability and Innovation Collaborative - MUSIC

H.1 SCOPE OF ACTIVITY

Background

Titles III, IV and V are federal grants that are part of the Higher Education Act of 1965 appropriated for Minority Serving Institutions (MSIs) to improve their academic quality, institutional management, and financial, and administrative capabilities for minority students, including programs that support science research and development. While these “Title” resources have been established, the resources are routinely reduced, resulting in greater competition among MSIs for fewer resources (Boland, 2013). Currently, funding for research and development is moving away from traditional grant opportunities and it is becoming essential for MSIs to compete for government and private industry contracts in order to remain competitive (Toldson, 2015). MSIs consistently do not receive adequate funding to make up for shortfalls in funding compared to larger research institutions with whom they are increasingly competing with, in their effort to secure more funding (Arnett, 2015).

NASA’s Office of Education Minority University Research and Education Project (MUREP) solicits proposals from MSIs to propose to the MUSIC activity to provide awareness of mission-related funds for MSIs to continuously build capacity through competitive opportunities, including contracts, grants, and contract execution best practices. MSIs require more funds for modern infrastructure. Researchers have indicated that, even when a public MSI receives more per student funding than its neighboring public Majority Institutions, the majority institutions tend to have more than five times the student enrollment, and as a result are better equipped to create technology-heavy infrastructures that are expensive to support (Jones, 2014). Further analysis indicates that because of this and related phenomenon, additional resources are required to grow institutional capabilities and research programs in public MSIs (Gassman, 2010; Matthews, 2011; Espinosa, et. al, 2015).

In the face of declining state and federal appropriations, MSIs could benefit from a forum where they can collaborate with institutions that share similar challenges to learn industry best practices that look for focused opportunities to develop partnerships, and learn about other potential funding sources (Jones, 2014). This solicitation seeks proposals that create workshop and training opportunities for MSIs to refine their process for securing NASA funding resources resulting in building their institutional capacity.

H.1.1 Goals and Objectives

MUSIC is:

1. A strategic effort that will leverage research and contract relationships of MSIs and NASA through relationships developed by non-profit organizations that may include collaboration of subject matter experts and access to NASA research facilities;
2. An effort to improve STEM education and research at MSIs;
3. A funded activity that seeks to build institutional capacity of MSIs;
4. An activity to support long-term sustainability of STEM research at MSIs.

MUSIC will address the following long-term NASA Agency goals and objectives, NASA Education performance goals that are outlined in the NASA Strategic Plan:

Strategic Goal 1

Expand the frontiers of knowledge, capability, and opportunity in space.

NASA Objective 1.7: Transform NASA missions and advance the Nation's capabilities by maturing crosscutting and innovative space technologies.

Strategic Goal 2

Advance understanding of Earth and develop technologies to improve the quality of life on our home planet.

Objective 2.4: Advance the Nation's STEM education and workforce pipeline by working collaboratively with other agencies to engage students, teachers, and faculty in NASA's missions and unique assets.

Strategic Goal 3

Serve the American public and accomplish our Mission by effectively managing our people, technical capabilities, and infrastructure.

Objective 3.1: Attract and advance a highly skilled, competent, and diverse workforce, cultivate an innovative work environment, and provide the facilities, tools, and services needed to conduct NASA's missions.

https://www.nasa.gov/sites/default/files/files/FY2014_NASA_SP_508c.pdf

NASA Education FY 2017 Performance Goals for Strategic Objectives

2.4.1: Assure that students participating in NASA higher education projects are representative of the diversity of the Nation.

2.4.4: Continue to provide opportunities for learners to engage in STEM education through NASA unique content provided to informal education institutions designed to inspire and educate the public.

2.4.5: Continue to provide opportunities for learners to engage in STEM education engagement activities that capitalize on NASA unique assets and content.

2.4.6: Ensure that grantees and cooperative agreement awardees conduct independent evaluations, providing evidence for the effectiveness of NASA STEM education investments.

NASA's goals and objectives are subject to change over time to adapt to national and agency-wide priorities. MUSIC seeks to address the agency goals and objectives through:

1. Increasing the institutional awareness of NASA competitive resources that can build the capacity of MSIs to offer and conduct STEM undergraduate and graduate research with a focus on NASA opportunities.
2. Assembling MSIs and their stakeholders with common interests, and challenges then provide common tools for MSIs to increase efficiency and optimize resources including opportunities to develop formal and informal partnerships.
3. Connecting MSI administrators and university STEM leaders to cutting-edge initiatives at NASA that can increase interest in securing research and contracting opportunities while supporting NASA's policy to achieve an Agency-wide goal of providing one percent of total contract value of prime and subcontracting awards to MSIs. <https://www.hq.nasa.gov/office/procurement/regs/1826.htm>

To achieve these goals, MUSIC seeks to increase university program capacity about practical uses of research to drive institution sustainability through the following targets:

- Advance the understanding of MSIs on how to effectively develop institutional administrative support by competing at the university level for funding opportunities,

which will result in successful application to, and management of, these funding opportunities (including those at NASA).

- Extend MSI's capabilities by:
 - A. Leveraging the MSIs research capabilities with NASA research to develop Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) projects that develop and demonstrate innovative technologies that fulfill NASA needs and have significant potential for successful commercialization.
 - B. Increasing the preparation of undergraduate and graduate science, technology, engineering, and mathematics faculty with opportunities to participate with NASA researchers and missions through grants and contracts.

Proposals submitted in response to this announcement shall present innovative approaches and focus on how they will help MSIs address one or more of these targets. Proposals may also address larger goals and objectives other than these targets, but shall at a minimum, address at least one of the above targets.

H.1.3 NASA Mission Context

The cultivation of diversity is both a management philosophy and a core value for all NASA MUREP efforts. MUSIC is one of four engagement opportunities in the MUREP portfolio that exist to strengthen relationships with MSIs.

The MSI Research Repository (MRR) is a matchmaking tool developed to aid NASA researchers seeking partners for mission focused research through cooperative agreements, Space Act Agreements (SAAs), SBIR/STTR, grants and contracts. The Repository advances MSI research teams seeking institutional partnerships by aiding NASA's ability to identify diverse partners through dynamic user interface with powerful search capabilities.

The MUREP MSI Partnerships team has a mission to be the NASA strategic partner link to MSIs. With various opportunities available to MSIs, having a dedicated resource for information sharing about opportunities is key. The HBCU/Partnerships platform will create a communications strategy and portal to ensure universities are aware of available opportunities and maintain a point of contact directory at MSIs. The platform will feature a task force to create a best practices program to help advance MSI relationships.

The Tech Transfer University-T2U, Office of Small Business Programs-OSBP, Small Business Innovation Research-SBIR, Small Business Tech seek to increase Transfer-STTR, Space Act Agreement-SAA (TOSSS) activity is crafted to advance university research to the attain more contracts. Each program supports the NASA Space Technology Mission Directorate with a desire to support future missions and commercialization. TOSSS has a key focus on the MUREP portfolio as the institutions seek to increase NASA relationships while advancing their capabilities in new arenas.

MUSIC encourages the development of entrepreneurship in academia with the associated goals of providing information for MSIs to compete for NASA awards and other funding opportunities. MUSIC will provide an opportunity for MSIs to identify, develop, and implement innovative ideas, leveraging a partnering model to help other MSIs. MUSIC seeks proposals that give sincere leverage to this philosophy.

H.2 Award Information

H.2.1 Award Information

This solicitation is a cooperative agreement to provide workshop(s) and training materials that establish a structure of sustainable support for MSIs that desire to develop their institution's capacity for competition for federal funds and implementation of NASA-focused development and contracting opportunities by MSIs. The workshops shall be designed to provide a forum for training and discussion among stakeholders and shall produce tangible outcomes related to the following themes:

1. The workshop(s) shall provide training on how MSIs can secure contract funds with little or no prior NASA funding experience by receiving assistance from training provided through the workshop with proposal development, developing strategic collaborations and assistance with financial compliance.
2. The workshop(s) shall provide training on how MSIs can secure contracting funds for larger contract awards of \$25M or less, through the development of strong partnerships and effective management of funding resources.
3. The workshop(s) shall provide training to manage NASA grant and contract resources using best practices, while continuing to foster an environment that promotes effective contract acquisition and management of federal resources. This training should result in the strengthening of institutional infrastructure by providing professional development opportunities for grants/sponsored research staff.

The goal of any proposed activity or combination of activities, should enable university sponsored programs/designee and associated staff to learn to compete for and effectively manage contracts, grants or other federal funding sources. Proposals for this activity shall be written so that the objectives are clearly focused on the desired effect that is to be achieved (e.g., training MSIs to successfully win/manage funding opportunities), rather than the logistics information of a single meeting. Proposers indicating a stated goal of simply paying for logistics in support of an event that they will host but not develop/provide training for will be considered unresponsive to this solicitation. MUSIC awardees shall develop, host, and co-present training for any associated workshops. The proposed workshops should result in:

1. Institutions that submit funding applications to NASA contracts and grants.
2. Publishable, quality training materials, designed to accomplish the goals of this solicitation with the intent of free distribution to all MSIs.

Proposals shall focus on providing complete face-to-face and training solutions regarding building MSI capacity and sustainability, not showcasing technology or public outreach events.

Constraints on Logistics

The logistics of the face-to-face workshop shall be appropriate for accomplishing the stated purpose. This includes the size, location, duration, scheduling, and cost of the event for both sponsors and attendees. Proposers are not permitted to choose what might appear to a reasonable person to be a resort location. Foreign locations are not acceptable. The funding must be commensurate with (a) the importance of the event to NASA in attaining its goals and objectives, and (b) NASA's role in supporting the diversity of the future workforce and benefiting the science and technical community.

Award Duration

Subject to Congressional appropriation of sufficient funds, and NASA's receipt of proposals of adequate merit, NASA expects to select two to three (2-3) proposals for this award. Awards from this program element are expected to be two years in duration. Under certain circumstances, and if properly justified, it may be permissible for a proposer to offer multiple in person/virtual meetings that span across that period. For example, a pair of events before and after for program/project management purposes, "targets of opportunity," or another large project, make sense to plan and propose together. Otherwise, proposers shall plan on hosting a single annual event.

NASA may elect to offer selection of only a portion of a proposed project, usually at a level of support that is reduced from that requested in the original proposal. NASA may also offer tentative selections in which NASA requests proposers to team on a joint project. Additionally, NASA may award an effort for less than the full duration of the proposal. In these instances, the proposer will have the opportunity to accept or decline such a selection. If the proposer accepts such an offer, a revised budget and statement of work may be required before NASA can initiate funding action on the proposal. However, if the proposer declines the offer of a partial selection or participation in a joint proposal, NASA may withdraw the offer of selection in its entirety.

H.2.2 Number of Proposals and Teaming

No more than one proposal per eligible lead institution is allowed, however eligible institutions are allowed to subcontract. Refer to 2 CFR §§ 200.318 through 200.326, as well as 2 CFR §§ 200.300 through 200.332. Proposals that leverage existing NASA funds to accomplish this activity will be considered non-responsive to this solicitation. Proposals are encouraged to leverage existing academic networks, synergistic relationships with non-profit companies and MSIs, to introduce non-traditional educational opportunities that will impact a greater number of institutions. For example, proposers may wish to team with higher education institutions to develop tactical plans and/or increase the variety of capabilities offered. As another example, an MSI may team with a non-profit entity to have ready access to their network of institutions, or an understanding of how to address the significant and unique cultural challenges diverse MSIs may encounter.

Because of the interdisciplinary nature of research and contracting, proposals are suggested (not required) to include several key team members with knowledge/ability in the following areas (team members may be graduate or post-doctoral students, do not need to be full-time, and may bring one or more skill sets):

1. At least one technical or engineering expert, bringing knowledge of current evidence-based research relevant to NASA.
2. At least one sponsored-programs expert, bringing knowledge of current practices used to drive incremental, federally-derived revenue through use of university research.
3. At least one team member with experience with minority institutions, who has expertise in engaging this audience in a culturally relevant manner.
4. At least one team member with extensive knowledge in business administration, pricing, and management of federal cooperative agreements.

5. At least one team member with extensive experience in planning and development of workshops and events.
6. At least one team member with significant external partner relationships and experience developing partnerships, including those with large for-profit and non-profit companies.

An independent evaluation expert shall be selected to develop and implement a robust evaluation of the proposed activity.

(see Appendix G of the 2018 EONS solicitation for guidance).

https://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=603807/solicitationId=%7B1483EFA2-3D27-AC90-7FE9-2CCA218C49FF%7D/viewSolicitationDocument=1/EONS%202018%20Solicitation%20Full%20Solicitation_12-20-17.pdf

H.2.3 Partnerships and Collaboration

Proposals that leverage funding through partnerships and other resources outside of NASA are encouraged, but not required. Specifically, proposals are encouraged to demonstrate collaborations with minority serving institutions, non-profits, and can include members of the Space Grant Consortia

(<http://www.nasa.gov/offices/education/programs/national/spacegrant/home/index.html#.VImi4ivF81I>), and/or other entities to increase the MSIs funding capacity associated with research opportunities, to achieve NASA goals and objectives; leverage sources of additional funding; and/or obtain essential training/resources that are not available at the proposer's home institution.

Carefully constructed partnerships among the award recipients, whose relationship should provide the greatest benefit to developing lasting success among MSIs in terms of an increase in the application of, and selection of NASA and other federal awards by MSIs is preferred. The award recipients will gain access to NASA personnel; exposure of faculty to necessary NASA work areas; leveraged support for their contracting efforts; increased opportunity for NASA partnerships, and contracting sources of future funding.

All proposals shall include a plan for partnership and sustainability (related to online training materials) and/or continuation beyond the funding period. Proposed activities may include matching funds and a plan for sustainability, or be developed to compete for other sources of funding.

Although a broad range of partnerships and collaborations will be accepted, proposers are encouraged to consider the following:

1. At least one four-year institution (MSI) partner in receipt of a minimum of \$5M in annual federal contracting/grant revenue; and/or
2. Access to at least one non-profit organization in receipt of greater than \$100M contracting revenue annually.
3. A coherent plan to engage MSIs to compete for a greater percentage of prime and subprime NASA contracting opportunities.

Starting points for finding NASA collaborators are below:

- National Space Grant College and Fellowship Program (Space Grant) State Space Grant points of contact (click on the map of the United States):
<http://www.nasa.gov/offices/education/programs/national/spacegrant/home/index.html>

- NASA Minority University Research and Education Program (MUREP) center points of contact:
<http://www.nasa.gov/offices/education/programs/national/murep/contacts/index.html>
- NASA Office of Education (OE) points of contact:
<http://www.nasa.gov/offices/education/contacts/index.html>

H.2.4 Integration with NASA and other MUREP Activities

NASA MUSIC awardees' work will be integrated with other relevant NASA Office of STEM Engagement and Office of Small Business Programs, and Space Technology Mission Directorate research projects, as appropriate. NASA will encourage communication among NASA MUSIC awardees and NASA principals to promote synergy, leverage ongoing work, and support relationship building during the course of the awards. NASA Langley Research Center (LaRC) in Hampton, VA will facilitate MUSIC Principal Investigator (PI) connections with appropriate members of the NASA Education communities to share information.

Proposers should plan for participation in a NASA MUSIC PI site meeting at LaRC, which may bring together related awardees with the NASA activity manager and associated NASA staff to coordinate details for the annual meeting and programmatic milestones.

H.2.5 IT Solutions

The awardee shall deliver the training materials in a web-based platform and provide course or video files in a format that is compatible with the hardware and operating systems of NASA and the related workshop participants. Furthermore, proposals that offer a unique approach in addressing developing peer training and collaboratively representing partner objectives are encouraged.

Any training solutions developed by the awardee shall be robust enough to serve the needs of a large community dispersed across the nation. All online resources and instructional software shall meet NASA information security requirements, such as not containing vulnerabilities that pose a risk to NASA's network. <http://www.nasa.gov/content/security-requirements-policies>

All websites/virtual tools developed/introduced by the awardee are the sole responsibility of the awardee and shall pose no security risk to NASA infrastructure. Any IT component of the proposer's offer that becomes a security risk shall be excluded from use and it will be the awardee's responsibility to resolve the security risk/update. The awardee shall facilitate the provision of security patches and upgrades, to include third-party applications, in response to public released vulnerabilities associated with resources it has developed/introduced.

Proposals for the development of stand-alone modules, DVDs/CDs, web sites, etc. that are not integrated with the program goal, annual event(s), and associated training are discouraged. Additional information on expectations is provided in Section 2 of this Appendix, and in the overall EONS announcement.

H.2.6 Period of Performance

Projects may be proposed for up to two years in duration. NASA funding is based on a satisfactory annual evaluation of each awardee’s documented progress; compliance with data reporting, applicable regulations and laws, and other program requirements; fulfillment of fiduciary responsibilities; and the availability of appropriated funds.

H.3 ELIGIBILITY INFORMATION

H.3.1 Proposing Organizations

The following categories of U.S. institutions are eligible to propose to the various activities under MUSIC.

Table of Eligibility for Lead Institution	Who May Apply?	Lead Institution for proposal?
Historically Black Colleges and Universities (HBCU)	x	x
Hispanic Serving Institutions (HSI)	x	x
Asian American and Native American Pacific Islander-Serving Institutions	x	x
Tribal Colleges and Universities (TCU)	x	x
Predominantly Black Institutions (PBI)	x	x
Predominately White Institutions (PWI)		
Native American Serving, Nontribal Institutions (NASNTI)	x	x
Alaska Native Serving Institution (ANSI)	x	x
Native Hawaiian Serving Institution	x	x
Other Minority-Serving Institutions (MSI)	x	x
Minority Serving Community Colleges	x	
Public School Districts with High Minority Enrollment		
Nonprofit Institutions (see note 1)	x	x

Note 1. See *Guidebook for Proposers*, Section 1.4.1, Proposing Organization Type

Proposal teams shall consist of eligible lead institutions that will receive no less than 55% of the award. Only one proposal per eligible lead institution/DUNS number will be accepted (institutions may subcontract). Eligible organizations that have multiple and/or different DUNS numbers shall submit no more than ONE (1) proposal as the lead institution. One of the proposing team members shall be an MSI. Every team submitting a proposal in response to this solicitation must designate a single individual, the PI, who will be responsible for the quality and direction of the entire proposed effort and for the use of all awarded funds. There shall be only one PI who is solely responsible for the proposed investigation.

Every institution shall propose, identify and designate a single Independent Evaluator (IE), who will be responsible for

- Analyzing qualitative and quantitative data for the sites evaluation activities and assisting the PI in development and implementation of the site's comprehensive Evaluation Plan. Within 60 days after award, every institution submitting a proposal in response to this opportunity, shall submit a comprehensive Evaluation Plan, for which both the PI and IE have concurred on in writing to NASA.
- Developing a comprehensive evaluation plan for proposed program in collaboration with PI and the internal evaluation team.
- Participating in annual kick-off meeting, virtual site visits, and evaluation technical assistance meetings with NASA and the NASA contract evaluator to review the proposed program's progress in achieving MUSIC's goal and objectives in support of NASA's evaluation of the MUSIC program.
- Coordinating and administering data collection, analysis and reporting of proposed program evaluation data.
- Providing status updates to the PI on evaluation activities, progress, and challenges.
- Developing an annual evaluation report and a final evaluation report.
 - Report should include effectiveness and/or impact of the proposed project via evaluation questions, data collection and results to assess performance and how improvements will be implemented based on evaluation evidence.
 - This evaluation shall measure evaluation tasks; conducts analyses; and provides formative and summative feedback to the project leadership throughout the life-cycle of the award.

NASA Centers cannot serve as partners in any proposal, nor can any Center or federal employee receive funds under this opportunity. However, a relationship between a NASA Center and a proposer may be referenced in the areas 'Relevance to NASA,' 'Intrinsic Merit,' and/or in the collaboration letters.

All funds for team that receives an award shall be sent to the team's PI, which may provide research and salary funding to non-NASA and non-Governmental Co-Is. All funding to non-NASA and non-Governmental Co-Is or organizational entities shall be routed through the PI's home institution.

H.4 PROPOSAL AND SUBMISSION INFORMATION

H.4.1 Proposal Submission

All information needed to respond to this announcement is contained in this Appendix, the EONS announcement, the *NASA Guidebook for Proposers* responding to a NASA Funding

Announcement (FA) Edition: January 2017

<https://www.hq.nasa.gov/office/procurement/nraguidebook/> and the Grants and Cooperative Agreement Manual (GCAM)

https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fprod.nais.nasa.gov%2Fpub%2Fpub_library%2FGrant_and_CooperativeAgreementManual.doc Note: If the information contained in this Appendix conflicts with the EONS announcement or *NASA Guidebook for Proposers*, the information in this Appendix takes precedence.

H.4.2 Notice of Intent to Propose

To assist in the planning of the proposal evaluation process, NASA strongly encourages, but does not require all prospective proposers to submit a Notice of Intent (NOI) to propose by the date given in each activity. 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 are to be submitted electronically by entering the requested information through NSPIRES at <http://nspires.nasaprs.com> by the dates given in Table 2 of this NRA for each activity in the relevant appendix. Note that NOIs may be submitted within NSPIRES directly by the PI; no action by an institution's Authorized Organizational Representative (AOR) is required to submit an NOI. Grants.gov does not provide NOI capability; therefore, NOIs shall be submitted via NSPIRES regardless of whether the proposal will ultimately be submitted via NSPIRES or Grants.gov. Interested proposers shall register with NSPIRES before it can be accessed for use. NSPIRES is typically open for the submission of NOIs for 30 days, starting about 90 days in advance of the due date for the proposals themselves. Since NOIs submitted after these deadlines may still be useful to NASA, late NOIs may be submitted by email as directed in Section 3.1 of the Guidebook for Proposers.

(<https://www.hq.nasa.gov/office/procurement/nraguidebook/>)

NOIs also aid NASA in establishing a peer review process that is free from conflicts of interest and that incorporates the requisite expertise. A separate NOI should be submitted for each intended proposal. The submission of an NOI is not a commitment to submit a proposal, nor is information contained therein considered binding on the submitter. NOIs will be treated as competition-sensitive material. Additional information about the NOI can be found in Section 3.1 of the *Guidebook for Proposers*.

H.4.3 Pre-proposal Teleconference or Workshop

A pre-proposal teleconference or workshop will be held before proposals are due. Prospective proposers are requested to submit any written questions no later than five (5) business days before the teleconference so that NASA will be able to cover as much information as possible at the teleconference. NASA plans to post written questions and answers and teleconference charts to the NSPIRES website. Also, an opportunity to ask questions and solicit clarification will be provided at the teleconference.

Interested proposers must register in NSPIRES and sign up for notification emails so they will receive notice of this teleconference. Refer to the MUSIC web page on NSPIRES for detailed information on question submission and schedule information.

H.5 PROPOSAL EVALUATION AND SELECTION

H.5.1 Proposal Review Criteria

Proposals will be evaluated by a merit review process composed of the proposers' professional peers (government and non-government), including science, education, business, and evaluation experts, who have been screened through EONS for conflicts of interest. Proposals will be reviewed and assessed on the strengths and weaknesses as measured against the following principle elements for proposal evaluation: (1) Intrinsic Merit, which includes Administration and Management Plan (including budget), (2) Relevance to NASA, (3) Collaboration Plan, and (4) Evaluation Plan.

H.5.1.1 Intrinsic Merit (40%)

The proposer shall address the following sub-elements to demonstrate the capability of the proposing organization or institution, staff, faculty, collaborators, and targeted students to achieve successful outcomes for the proposed project or program.

Evaluation of Intrinsic Merit includes consideration each of the following criteria (not listed in any order of importance):

Administration:

- Degree to which the proposal contains a strong marketing and outreach plan to reach the greatest number of eligible MSIs that desire to participate throughout the United States;
- Degree to which proposed effort offers innovative methods, approaches, and concepts for project or program;
- Degree to which proposed effort builds on lessons learned, evidence-based practices and educational research for administration and implementation of the project or program;
- Degree to which proposed effort is informed by evidence based best training practices and customer need; and
- Degree to which the proposal provides clear goals and objectives that are aligned with NASA's Education goals and objectives as described in the NASA Strategic Plan in section 2 of this opportunity.

https://www.nasa.gov/sites/default/files/files/FY2014_NASA_SP_508c.pdf

Management:

- Degree to which the proposal includes qualifications, capabilities, and experiences of the PI and members of the management team; including sponsored programs/ research, science, technology, and/or engineering, NASA content knowledge, logistics, training, and evaluation expertise;
- Degree to which the proposed effort demonstrates clear goals and objectives that are aligned with NASA, NASA's Office of Education, and the home organization or institution where the activity will reside;
- Degree to which the proposal presents a clearly organized and workable management plan for achieving contracting goals and objectives, and includes clear lines of communication with NASA and other members of the collaborative proposal team;
- Degree to which the proposal includes a feasible timeline per proposed activity year and milestones or benchmarks for success;
- Budget is determined to be adequate, appropriate, reasonable and realistic for all partners including MUREP, science and/or engineering, proposal team, and external evaluators;

- Indicates how the proposed budget is clearly aligned with proposal narrative. All budget line items are explained and justified;
- Includes sufficient travel funds to cover costs for the PI and other key staff to attend critical meetings. Requested travel shall include purpose, the number of trips and expected location, duration of each trip, airfare, and per diem;
- Provides a budget justification on how funds will be allocated to support project personnel, travel, student scholarships or support, research funding, and subcontracts;
- Includes a milestone chart with proposed deliverables is clearly defined.

H.5.1.2 Relevance to NASA (20%)

Evaluation of impact to NASA considers mission relevance and scientific relevance and includes consideration of each of the following criteria (not listed in any order of importance):

- Degree to which the proposal provides a plan for a workshop to teach MSIs how to compete for and manage NASA contract and grant opportunities;
- Degree to which the proposed effort cultivates diversity and extends faculty and student access to existing NASA facilities;
- Degree to which the proposed effort utilizes NASA's unique contributions to science, engineering, and exploration;
- Degree to which the proposed effort aligns with one or more of existing NASA missions or programs; and
- Degree to which the proposed effort aligns with NASA's strategic goals, and other MUREP activities.

H.5.1.3 Collaboration Plan (20%)

Evaluation of Collaboration Plan includes consideration of each of the following criteria (not listed in any order of importance):

- Degree to which the proposed plan outlines all proposal team responsibilities and contributions to the proposed activity.
- Degree to which the proposed plan details any matching/in-kind funding being provided by each member of the proposal team.
- Degree to which the proposed plan connects to other MUREP-funded programs.
- Degree to which the proposed plan provides a letter of support from each collaborator. Any collaborators must provide letters of support for the proposal that state: the name of the proposal; the name of the institution that will collaborate, and contributions the institution will provide. Letter of support shall also provide a list individuals and the expertise they will contribute to the proposal. Letters must be recent, written specifically for this proposal, and dated within 45 days prior to the solicitation due date.

H.5.1.4 Evaluation Plan Approach (10%)

NASA identifies evidence of effective practices in STEM education through program evaluation. Evidence is a key criterion in NASA's competitive processes for allocating resources, ensuring that the most effective STEM education activities are supported. Program evaluations are planned studies using research methods to collect and analyze data to assess to what extent activities/programs are being implemented and what, if any, impact can be measured. Evaluations answer specific questions about performance and may focus on assessing activity/program process and outcomes.

Any proposed MUSIC program evaluation shall follow generally-accepted professional standards for evaluative research. Evaluations are evidence-based, meaning that they are based on verifiable data and information that have been gathered using the standards of professional research and evaluation organizations. Such data can be both qualitative and quantitative. A wide variety of evaluation designs may be utilized, such as case studies, quasi-experimental designs or experimental designs, as well as data collection methods, such as key informant interviews, surveys, direct observation, or focus group discussions. Regardless, such data shall pass the tests of reliability and validity, which are different for qualitative and quantitative data. NASA sets concrete performance goals and is accountable to those goals through a framework that measures progress. Objective and verifiable performance metrics, internal and external review processes, valid and reliable data collection instruments, and evaluation studies are used to assess progress and performance across the portfolio, including lines of business, programs, projects, and activities. Through performance monitoring, assessment of the MUSIC program, the proposer(s) shall demonstrate its results-driven management approach that is focused on optimizing value to the American public.

The following describes key evaluation milestones associated with the MUSIC program:

Comprehensive Evaluation Plan (*due 60 days after award*)

- Describes an appropriate evaluation plan and process to document outcomes and demonstrate progress toward achieving the objectives of proposed education activities.
- Evaluation methods shall be based upon reputable models and techniques.
- Measures effectiveness and/or impact of the proposed project via evaluation questions, data collection and results to assess performance
- “Evaluate with fidelity” – evaluations shall be conducted in the manner in which they were written. If there is a change, the awardee shall submit a revised plan.

Quarterly Reports (*Due April 15th, July 15th, October 15th and January 15th*)

- Update NASA on activity progress, including the number of institutions served, achievement highlights, outside funding and other items such as the Office of Education Performance Management (OEPM) system (i.e. generic questions about evaluation, status update about activity evaluation).

Annual Report (*Developed by the PI, due 60 days prior to Anniversary Date*)

- Provide an annual review of program progress, including the number of institutions served, and achievements
- **NOTE:** At the end of the performance period (2 years), the Annual Report will be considered a Final Report, which will be due 60 days prior to the expiration date of the grant or cooperative agreement. Additional details located in ‘Award Reporting Requirements.’

Evaluation Report (*Developed by an external evaluator, as an appendix to the annual report*)

This will document the outcomes and demonstrate progress toward achieving the objectives of proposed education activities aligned to the comprehensive evaluation plan.

The proposal shall adequately describe its process to obtain quantitative and qualitative data, and the quality of the activity infrastructure and programming by addressing each of the following (not listed in any order of importance), which will be evaluated for completeness:

Degree to which the proposal describes an appropriate evaluation plan approach to document outcomes and demonstrate progress toward achieving objectives of proposed education activities. The forms of evaluation shall be based upon reputable models and techniques that are appropriate to the content and scale of the activity. Proposers shall adequately describe the planned approach that will be used to evaluate the proposed education activities. The evaluation plan approach shall follow generally-accepted professional standards for evaluative research. To assist in development of their proposals, PIs and Independent Evaluators are encouraged to read the following resources:

- [“Common Guidelines for Education Research and Development”](#)
- [“Identifying and Implementing Educational Practices Supported by Rigorous Evidence: A User Friendly Guide”](#)
- [“User-Friendly Handbook for Project Evaluation”](#)
- [“Designing Evaluations”](#)
- Identification of an internal evaluation system or evaluator, and identification of an external evaluator who will develop plans for an evaluation approach; develop or identify tools or processes for quarterly and annual data collection.
- Degree to which the proposal describes how feedback from organizational/institutional staff, faculty, and students, collaborators, partners, and stakeholders will be obtained and utilized to improve proposed activities.

NOTE: The MUSIC Program Management Office will provide feedback/input on the proposed Evaluation Plan Approach, which should be addressed in the submitted Comprehensive Evaluation Plan.

H.5.1.5 Sustainability (10%)

The proposal shall clearly describe sustainability beyond the original funding cycle. Proposals shall include a detailed sustainability plan with a clear narrative that demonstrates how the work begun in this proposal will be continued beyond the period of the award.

The following sub-elements shall be used in the evaluation of the sustainability (not listed in any order of importance):

- The post-MUREP vision/objectives shall be evident beyond the end of program funding. The sustainability plan shall include steps to achieve objectives.
- Determine program guidelines/themes, with associated measures/indicators.
- Determine sources of additional funding for the continued implementation of the program. Includes sufficient travel funds to cover costs for the PI and other key staff to attend critical meetings/conferences.
- Determine roles and responsibilities of the stakeholders.
- Include a strategic communication plan with internal stakeholders and the larger MSI community.

H.5.2. Review and Selection Process

Proposals will be evaluated by a merit review process composed of the proposers' professional peers (government and non-government), that may include backgrounds in business, science, education and evaluation, who have been screened through EONS for conflicts of interest. Proposals will be reviewed and assessed on the strengths and weaknesses as measured against each of the four criteria (Intrinsic Merit, Relevance to NASA, Collaboration Plan and Evaluation Plan) and their sub-elements.

The Selection Official for the MUSIC awards is the MUREP Project Manager, NASA HQ.

H.6 AWARD ADMINISTRATION INFORMATION

H.6.1. Award Reporting Requirements

The reporting requirements for award recipients under MUSIC will be consistent with Appendix E in Section 8.0 of the Grant and Cooperative Agreement Manual (https://naistst1.nais.nasa.gov/pub/pub_library/srba/index.html).

Within 30 days after award:

- Submit a descriptive project abstract for the NASA MUSIC website.
- Submit a Management Plan for the proposed activity.
- Identify a business lead for administrative support/financial reporting for the duration of the award.

Within 60 days of award:

- Submit an updated evaluation plan including an evaluation point of contact, created with input from an external evaluator.
- Submit an updated management plan for the proposed activity from the business lead.
- Participate in an MUSIC PI Cohort Virtual Exchange.
- Submit quarterly reports for NASA MUSIC implementation.
- Submit an Executive Summary – overall progress, accomplishments/milestones, challenges and/or lessons learned.
- Award Status - schedule status, including significant events and activities, and financial status.
- Metrics - as required to be reported into the OEPM system.

An annual progress report is required each year no later than 60 days *prior to* the anniversary date of the project start date.

The report shall, at a minimum, document:

1. Project activities over the period of performance of the award;
2. Project accomplishments measured against the proposed goals and objectives;
3. Evidence of how project activities have furthered stakeholder priorities; and
4. Evaluation findings demonstrating progress toward achieving the objectives of the proposed education activities; and
5. Extent to which new collaborations and/or partnerships have evolved; and
6. Plan of activities for the next year.

A final report with summary information is required 60 days prior to the end of the project.

H.6.2 NASA Education Metrics

- Awardees shall use standard NASA surveys from the OEPM system to collect metrics for certain events. These are in addition to any project evaluation plan surveys.
- Awardees shall participate in OEPM training (may be virtual) to gain familiarity with the repository.
- Awardees shall use Project Activity Forms to report event-based information.

H.6.3 Summary of Key Information

Total available budget for activity	~ \$900K
Number of new awards pending adequate proposals of merit	2-3
Event Start date	Planning may start upon award, with the first event being held no later than August 2018 (Date Subject to Change).
Duration of awards	~2 years
Award Type	Cooperative Agreement
Pre-proposal Conference (Optional)	Check the NSPIRES website for details.
Due date for Notice of Intent to propose (NOI)	(DATE SUBJECT TO CHANGE); 11:59 pm Eastern Time
Due date for proposals	(DATE SUBJECT TO CHANGE); 11:59 pm Eastern Time
Page limit for the central Scientific-Educational-Management section of proposal	15 pp; see also Chapter 2 of the <i>NASA Guidebook for Proposers</i> https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2017.docx
Relevance to NASA	Proposals must address both education and technical goals. See Section E.5.1.1 of this appendix.
Detailed instructions for the preparation <i>NASA Guidebook for Proposers</i> and submission of proposals	See the at https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2017.pdf https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fprod.nais.nasa.gov%2Fpub%2Fpub_library%2FGrant_and_CooperativeAgreementManual.doc
Submission medium	Electronic proposal submission is required via NSPIRES or grants.gov; no hard copies will be accepted. See Chapter 3 of the <i>NASA Guidebook for Proposers</i> .

<p>Web site for submission of proposal via NSPIRES</p>	<p>http://nspires.nasaprs.com/ (help desk available at NSPIRES help@nasaprs.com or (202) 479-9376 from 8:00 am to 6:00 pm Eastern Time, excluding Federal Government holidays).</p>
<p>Web site for submission of proposal via grants.gov</p>	<p>http://grants.gov (Contact Center is available by email at support@grants.gov, or by calling 1-800-518-4726 and via website at https://grants-portal.psc.gov)</p>
<p>Selection Official</p>	<p>Ms. Joeletta Patrick Minority University Research and Education Project (MUREP) Manager Education Office, NASA HQ, 4T37 Washington, DC 20546 joeletta.o.patrick@nasa.gov</p>
<p>NASA point of contact concerning this project</p>	<p>Mr. Clarence Bostic NASA Langley Research Center Office of Education Hampton, VA 23681-2199 clarence.e.bostic@nasa.gov</p>

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