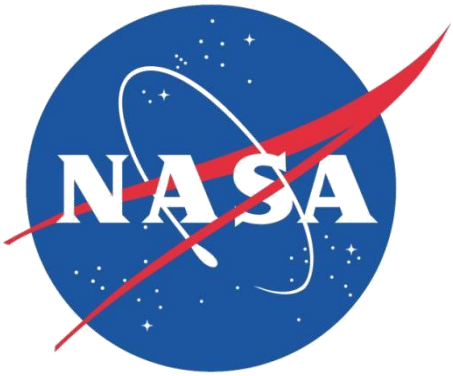
OMB Approval Number: 2700-0092
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National Aeronautics and Space Administration
Office of STEM Engagement

National Space Grant College and Fellowship Program - Artemis Student Challenge Opportunities
FY2020 – FY2021

Announcement number: **NNH20ZHA001O**

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Space Grant Artemis Student Challenge Opportunities

1 Overview of the Funding Opportunity

The National Aeronautics and Space Administration (NASA) Office of Science, Technology, Engineering, and Mathematics (STEM) Engagement (OSTEM) solicits new competitive grant proposals from the National Space Grant College and Fellowship Program (Space Grant) consortia. The Space Grant Program is dedicated to building, sustaining, and deploying a skilled, high-performing and diverse STEM workforce that meets the current and emerging needs of NASA and the nation. The goal of this solicitation is to invite Space Grant consortia members, specifically all 50 states, the District of Columbia, and the Commonwealth of Puerto Rico, to submit proposals to advance the quality, relevance, and overall reach of current and future Artemis student challenges. With the Artemis Mission, NASA will land the first woman and next man on the Moon by 2024, using innovative technologies to explore more of the lunar surface than ever before. NASA's OSTEM seeks innovative proposals that will provide foundational learning opportunities to prepare an unprecedented number of undergraduate students to learn and engage in Artemis-focused challenges that align with the technology needs of the Artemis Mission and/or that will provide the Artemis generation new authentic, high-quality student challenge experiences. These efforts will result in interested undergraduate students of all skill and readiness levels to prepare for, and then experience, exciting activities while preparing for and directly contributing to NASA's mission.

Space Grant consortia lead institutions are the only entities that are eligible to submit proposals. NASA strongly encourages lead institutions submitting proposals to leverage existing partnerships across their affiliates, conglomerate multiple Space Grant consortia, and/or establishing expanded strategic partnerships spanning industry, academia, and non-profit organizations. Further, proposed activities that maximize the overall reach to specifically engage underrepresented and underserved communities, especially those that have not historically participated in NASA student activities in the past, is highly encouraged. NASA recognizes that foundational resources, such as relevant coursework, hands-on activities, tutorials related to enabling technologies, and/or systems engineering simulations are necessary to ensure that interested undergraduate students at all skill levels, and spanning the entire nation, can be inspired and fully prepared to participate in, and contribute to, the Artemis Mission through relevant student challenges. As a result, this solicitation covers three (3) specific themes, described in detail below, that span this continuum.

Independent of this solicitation, NASA is actively assessing opportunities for providing relevant capstone opportunities for high-performing Artemis student challenge teams. Proposers are invited to consider student challenge themes, and strategic partnerships, that could logically progress toward the flight of student hardware and/or software to advance toward Artemis program goals. Examples of potential follow-on enrichment activities by high-performing Artemis student challenge teams may include, but are not limited to, the following:

- Utilizing NASA's Flight Opportunities program for flight testing aboard aircraft, high-altitude balloons and suborbital rockets. These flights expose payloads to the rigors and characteristics of spaceflight and give researchers the data they need to refine and mature their innovations for possible infusion into NASA missions to the Moon and beyond.
- Utilizing the International Space Station (ISS) to advance scientific knowledge and demonstrating key technologies.
- Utilizing current and future deployment opportunities associated with NASA's CubeSat Launch Initiative using a growing array of CubeSat deployment platforms.

For reference, Artemis Goals and Activities can be found in Appendix A, and related technologies of specific interest are outlined in the current NASA Technology Taxonomy Activities.

As stated, this solicitation encompasses three (3) themes. Each consortium may submit only one (1) separate proposal for each theme. The themes are as follows:

- Theme 1: Foundational Enablers – Teaching and Resource Availability
- Theme 2: Foundational Enablers – Core Technologies
- Theme 3: Pilot Challenges

Themes 1 and 2 are foundational opportunities to enable wider participation in student challenges in the future, with the goal of maximizing nationwide participation while spanning all demographic categories and skill levels. Theme 3 is an opportunity to design and execute an engaging pilot challenge that is relevant and widely scalable to evolve into nationwide challenges, consisting of broad and diverse teams spanning all skill levels. Space Grant lead institutions opting to submit proposals for more than one theme are encouraged to align the content of each proposal in complimentary ways.

Specific proposal content details can be found below for each of the three (3) themes in Section 5 of this solicitation.

NASA plans for the resultant awards to be grants, with no cost matching requirement for awardees; however, proposers shall specify any voluntary cost matching in their proposals.

2 National Space Grant Program Goals and Objectives

The National Aeronautics and Space Administration Authorization Act for Fiscal Year 1988, Public Law 100-147, authorized NASA to initiate the Space Grant Program to increase understanding, research, development, and utilization of aerospace science and technology through the nation's universities. The goal of the Space Grant Program is to contribute to the NASA mission, specifically in the area of government and industry partnerships "to improve America's aerospace technologies and advance American leadership" by funding education, research, and informal education projects through a national network of university-based Space Grant consortia. Space Grant consortia are expected to develop innovative and integrated plans to advance aerospace knowledge and expand related activities.

The specific objectives of the Space Grant Program are to:

- Promote a strong STEM education base from elementary through secondary levels while preparing teachers in these grade levels to become more effective at improving student academic outcomes;
- Contribute to the technological progress of NASA's Mission Directorates;
- Establish and maintain a national network of universities with interests and capabilities in aeronautics, space, and related fields;
- Encourage cooperative programs among universities, aerospace industry, and Federal, state, and local governments;
- Encourage interdisciplinary training, research, and public service programs related to aerospace; and
- Recruit and train U.S. citizens, especially women, underrepresented minorities, and persons with disabilities, for careers in aerospace science and technology.

3 Eligibility

Proposals will be accepted from the lead institution of Space Grant consortia in each state along with the District of Columbia and the Commonwealth of Puerto Rico. NASA will only accept one proposal, per consortium, per theme.

4 Award Approach

Awards selected under this announcement, will be considered Phase 1 awards. Phase 1 refers to the initial period of performance and will be referred to as "Phase 1." The types of Phase 1 themes being solicited are described in Section 5.1.2 of this solicitation. There will be a second and optional phase to the awards, which will be referred to as "Phase 2." Phase 2 will extend the initial period of performance and will be a funded extension of approved work. Select awardees seeking to participate in Phase 2 will be notified by NASA to participate in a virtual conference to discuss the outcome of the initial period of performance, completed milestones, delivered products, and review proposed plans for Phase 2. The tentative timeframe for these virtual conferences is mid- to late-November 2020. Prior to this virtual conference, awardees shall provide any desired revisions to the originally-proposed Phase 2 activities, deliverables, milestones, schedule, and budget no later than November 2, 2020. NASA will evaluate the desired revisions and use the virtual conference to discuss Phase 1 results, overall Phase 2 activities, and likely outcomes. NASA will then determine which awardees will receive a funded award extension (Phase 2). NASA will evaluate the merit of exercising the Phase 2 for each project using the same evaluation criteria described in Section 6 of this solicitation.

NOTE: Awardees not under consideration by NASA for Phase 2 funding will be so notified in writing by September 18, 2020, and will not be required to participate in a Phase 2 pre-selection virtual conference. Awardees receiving such a written notification shall promptly initiate the award closeout process for their Phase 1 awards.

5 Artemis Student Challenge Proposal Details

5.1 Required Sections

- Title page
- Proposal Body (8-page maximum)
    - Proposed Project Design of Phase 1 Activities (4-page maximum)
        - Phase 1 Narrative
        - Phase 1 Project Milestones
        - Phase 1 Budget
    - (Optional Section) Phase 2 Activities (4-page maximum)
        - Phase 2 Narrative
        - Phase 2 Project Milestones
        - Phase 2 Budget
- Principal Investigator's (PI's) Curriculum Vitae (2-page maximum)

Fonts for text and tables shall be at least 11 point in size and submitted in True-Type Font, for ease of reading. The complete proposal shall be in Portable Document Format (PDF) with applicable section bookmarks.

5.1.1 Title Page

Include the name of the proposing institution and the PI's contact information.

5.1.2 Proposed Project Design of Phase 1 Activities

Phase 1 refers to the initial period of performance denoted in this section, and is referred to as "Phase 1." Every proposed effort shall include an Executive Summary located before the start of the proposed project design. Proposal details to be included for each of the three themes are listed below (each submitted proposal shall only cover one of these themes):

Theme 1: Foundational Enablers – Teaching and Resource Availability

Description: To continuously expand the number of participants in future student challenges, NASA desires to expand the availability of Internet-accessible student self-study material, in addition to making teaching resources available that interested teachers and professors can use to teach and/or mentor students interested in contributing to current and future Artemis endeavors. The intended primary audience is undergraduate students enrolled in STEM courses of study.

Examples of relevant subject matter include, but are not limited to, the following:

- Systems Engineering and Program/Project Execution Case Studies
- Effects of Microgravity: Benefits, Challenges, Research Focus Areas, Known Phenomena, Benefits to Humanity
- Lunar and Martian Regolith composition and potential in situ processing techniques

For Phase 1, initial period of performance (approximately May through December 2020), proposers shall:

- Develop new, or adapt existing, subject matter, and define the overall scope, for implementation into an Internet-accessible student self-study interface (include authorship, if preexisting). NOTE: delivered content shall not be subject to copyright or any other conditions that will prevent free access and broad usage as public-domain and open-source content).
- Design an engaging non-proprietary, internet-accessible, multimedia teaching interface for students wanting to gain foundational knowledge relevant to current and future Artemis activities.
- Create a distribution package of the subject matter to enable interested teachers and professors to download for classroom education and/or mentoring students.
- Products created under Phase 1 shall be delivered and/or made accessible to NASA for review not later than December 10, 2020.

For proposers desiring consideration for funding to cover the Phase 2 period of performance (approximately January 2021 through August 2021), proposers shall:

- Make products developed under the initial period of performance available on-line for initial testing by the public.
- Formally solicit feedback in the form of surveys or other mechanisms.
- Provide a means for technical support to the initial community of testers, within four (4) calendar days of each request, via e-mail.
- Implement additional subject matter, and/or add scope (include authorship, if preexisting). NOTE: Content shall not be subject to copyright or any other conditions that will prevent free access and broad usage as public domain and open source content).
- Implement student knowledge testing modules, describe optional hands-on complimentary learning activities, and/or provide interactive case studies for students to learn about and diagnose real-world engineering and scientific problems using data sets that are reflective of limited aerospace telemetry and commanding capabilities.
- Create a distribution package of the additional subject matter, test modules, hands-on activity tutorials, and/or real-world case studies to enable interested teachers and professors to download for the purpose of classroom education and/or mentoring students.
- The initial user feedback report and Phase 2 products shall be submitted to NASA for review not later than August 9, 2021.

Theme 1 Award Funding: Not to exceed $100k for Phase 1, and up to an additional $100k for Phase 2.

Theme 2: Foundational Enablers – Core Technologies

Description: Remedial technologies are critical components necessary to enable next-generation designs, technologies, and architectures that will be the foundation of human

activities on the Moon and eventually in deep space. Therefore, it is critical for students within the Artemis Generation to gain hands-on knowledge and exposure to these technologies.

Examples include, but are not limited to, the following:

- Customized Computer/Software Systems (microcontrollers, field programmable gate arrays, sensor systems, command and control interfaces, telemetry, and human interfaces)
- Robotics (structural/mechanical/electrical design, control systems, and human interaction methodologies)
- Additive Technology
- Virtual Reality/Augmented Reality (human/computer interaction, telepresence for distant machines and robots, artificial intelligence, graphics-based task support, methods for managing time delays for highly distant interactions)

For Phase 1, initial period of performance (approximately May through December 2020), proposers shall:

- Select a technological focus area that is relevant, and a critical building block, to current and future Artemis endeavors.
- Develop components and/or identify Commercial Off the Shelf (COTS) products that are, or can be made, readily available for purchase as a kit, can be used in hands-on activities by students to learn how to use the technology, and can also be used as-is for student challenges and/or flight projects.
- Specify the kit components, how to procure each of the components, and assembly/configuration instructions to make the hardware ready to use for learning activities.
- Define preparatory tasks for the student to gain basic familiarity with the hardware.
- Design and/or develop at least ten (10) sequential hands-on learning activities to methodically advance the ability of each student to implement the technology into future projects.
- A demonstration, ether in-person or via virtual conference, of kit configuration, preparatory tasks, and sequential hands-on learning activities shall be delivered and presented to a NASA audience not later than December 10, 2020.

For proposers desiring consideration for funding to cover the Phase 2 period of performance (approximately January 2021 through August 2021), proposers shall:

- Make kit hardware, configuration instructions, preparatory tasks, and hands-on learning activities developed under the initial period of performance available on-line.
- Formally solicit feedback in the form of surveys or other mechanisms.
- Provide a means for technical support to the initial community of testers, within four calendar days of each request, via e-mail.
- Implement additional hands-on learning activities, and/or design problems for the

students to attempt based on their completed sequential hands-on learning.
- The initial user feedback report and Phase 2 products shall be submitted to NASA for review not later than August 9, 2021.

Theme 2 Award Funding: Not to exceed $250k for Phase 1, and up to an additional $250k for Phase 2.

Theme 3: Pilot Challenges

Description: NASA seeks to augment the Artemis student challenge portfolio via exciting, relevant, and widely-scalable competitions that allow nationwide student participation reflecting broad and diverse demographics, and spanning varying skill levels.

For Phase 1, initial period of performance (approximately May through December 2020), proposers shall:

- Design their challenge: describe the general concept, explain how it relates to the Artemis program, and provide initial rules and scoring constructs.
- Define the challenge hardware and software to be used, and variations for the challenge hardware and software to be configured, so that teams spanning varying skill levels are able to compete in separate categories.
- Create the designs and specifications for necessary infrastructure, competition venues, and any support and safety equipment needed to safely and effectively execute the pilot challenge.
- Plan and execute local pilot challenges to validate the rules and scoring constructs, demonstrate levels of interest across competitors and the public, and show how the results directly address NASA's technological challenges related to the Artemis program and/or prepare beginner- and intermediate-level competitors to advance toward more advanced levels of future competition.
- Define ways for remote observers to get directly involved.
- Apply lessons learned to define efficient and effective ways to expand the concept for broader and broader execution in the future.
- Convene participating teams, stakeholders, and observers, to discuss and disseminate results, iterate upon specifications of the baseline hardware and software, and effectively evolve challenge rules and scoring constructs.
- A report documenting the pilot challenge end-to-end design, the results of the initial execution of pilot challenge activities (including photo and video documentation), and the results of the assessment and recommended improvements identified by participating teams, stakeholders, and observers shall be delivered to NASA not later than December 10, 2020.

For proposers desiring consideration for funding to cover the Phase 2 period of performance (approximately January 2021 through August 2021), proposers shall:

- Host and facilitate the execution of no less than six (6) separate regional competitions, with top performers (based on objective scoring constructs developed during Phase 1) advancing to a hosted finals competition.

- Plan and execute a live broadcast of the hosted finals competition via Internet streaming services.
- Execute a hosted finals competition after the completion of the regional competitions.
- Convene a focus group consisting of participating teams, stakeholders, and observers, to discuss results, and opportunities for further improvements toward the broader goal of executing future nationwide Artemis student challenges.
- Author a report that documents:
    - the challenge end-to-end design,
    - the results and lessons learned for challenge activities conducted to date (including photo and video documentation),
    - recommendations for future improvement opportunities, and
    - any additional information to enable any interested nationwide entity to successfully execute the challenge within their jurisdiction(s),

  This report shall be delivered to NASA not later than August 9, 2021.

Theme 3 Award Funding: Not to exceed $250k for Phase 1, and up to an additional $250k for Phase 2.

5.1.3 Project Milestones

Proposers shall include a milestone chart of all proposed activities to cover the award period of performance period (see Appendix B for Sample Milestone Chart). Upon selection, if an awardee needs to update its milestone chart, an awardee will have up to 30 days after award notification from the NASA Shared Services Center (NSSC) to do so.

5.1.4 Budget

The budget narrative shall clearly align with the budget table (see Appendix C for Sample Budget Tables) and corresponding proposed activities to justify the proposed costs.

In addition to the funding guidelines and requirements in the March 2018 version of the *NASA Guidebook for Proposers*, the following restrictions in Title 2 CFR Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Government-wide regulations), and in 2 CFR Part 1800 (NASA's supplementing regulations), govern the use of the federally-provided funds for this opportunity (referred to collectively as NASA Space Grant funds) and are applicable to this announcement:

- All resources will be paid to the lead institution. Subcontracts, partnerships and any other agreements within the proposing team are with the lead institution and not with NASA.
- The budget shall clearly include information for the lead institution's overhead/general and administrative (G&A) expenses.
- Direct Labor costs shall be separated by titles (e.g. director, program manager, program coordinator, graduate research assistant, clerk, etc.) with estimated hours, hourly rates, and total amounts of each. The certified negotiated indirect costs for the institution shall be explained sufficiently whether they are being requested from NASA funds or from the cost-share portion.
- Subcontracts to an individual or organization: Refer to Appendix C of the March 2018

version of the *NASA Guidebook for Proposers* (https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2018.pdf). Subcontract awards should include a separate budget, work statement, and/or a breakout of hourly rate for direct labor.

- Other costs, with each significant category detailed, shall be explained in reasonable detail and substantiated whenever possible.
- Domestic travel shall include the purpose, the number of trips and expected location, duration of each trip, airfare, and per diem. Domestic travel shall be appropriate and reasonable to conduct proposed activities.
- Funds shall not be used for subcontracted research/manufacturing efforts carried out by non-U.S. entities, but may be used for the direct purchase of supplies and/or services that do not constitute research/manufacturing from foreign sources. For additional guidance on foreign participation, see Proposals Involving Non-U.S. Organizations, March 2018 version of the *2018 NASA Guidebook for Proposers*, page 29, Appendix A (https://www.hq.nasa.gov/office/procurement/nraguidebook/).
- Funds shall be expended on students, faculty and staff in accordance with the National Space Grant College and Fellowship Act (Public Law 100-147), and its implementing regulations at 14 CFR Part 1259, National Space Grant College and Fellowship Program.

5.2 Procedural Information

5.2.1 Budget Risk Evaluation Process

The NASA Grants 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 Grants 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.

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

At its option, a proposer may review information in FAPIIS and comment upon any information about itself that NASA previously entered and is currently in the system. NASA will consider any comments received from the applicant, in addition to the other information in FAPIIS, to make a judgment about the applicant's integrity, ethics, and record of performance under Federal awards in completing the review of risk posed by applicants as described in 2 CFR 200.205.

5.2.2 Budget Execution

Award funding will be managed by NASA OSTEM and the NSSC, in coordination with each awardee, including funding that spans multiple fiscal years. The total funds disbursed over the

period of performance will not change, but the fiscal year in which funds are disbursed will be phased accordingly. NASA will make every reasonable effort to disburse award funds in a timely manner, and in accordance with applicable laws and procedures.

5.2.3 Administrative Execution

Space Grant consortia lead institutions receiving awards under this solicitation shall execute all resulting activities in accordance with the existing administrative processes documented in the base grant award which resulted from the following solicitation: **National Space Grant College and Fellowship Program - Opportunities in NASA STEM FY 2020 – 2024 (NNH19ZHA001C).** Specifically, award recipients for this current opportunity shall maintain existing processes, such as:

- Data Management Plan
- Safety Policy

6 Proposal Evaluation Criteria

NASA will evaluate proposals based on the following criteria: **(1) Technical, (2) Organizational, (3) Educational, and (4) Budget:**

Technical (25%):

- Identifies the primary theme, and aligns with the theme-specific content described in Section 5;
- Describes a feasible plan for achieving intended results on schedule; and
- Describes any existing NASA content, support, and/or facility usage planned for execution of the activities.

Organizational (25%):

- Identifies major team members, how each will contribute to the effort, and identifies any planned contributions by students;
- Demonstrates effective teaming within the Space Grant consortia, and describes benefits related to any participating strategic partners beyond Space Grant consortia entities; and
- Details specific contributions (such as financial, personnel, and facilities) being provided by strategic partner(s).

Educational (25%):

- Demonstrates innovative and engaging methods, approaches, and concepts that contribute toward meeting Artemis program and STEM workforce objectives and/or generates foundational approaches that will systematically lead to favorable future outcomes;
- Authentically connects students to NASA’s space and aeronautics mission activities through foundational learning and Artemis student challenges; and
- Demonstrates capacity to support efforts to build a STEM workforce that reflects the diversity of the nation.

Budget (25%):

- Demonstrates adequate, reasonable, and effective use of funds throughout the duration of the award; and
- Aligns with budget guidelines and requirements specified within this Solicitation.

7 Solicitation/Award Schedule

Activity	Date
Solicitation Release	December 11, 2019
Pre-Proposal Webinar Questions Due	January 13, 2019
Pre-Proposal Informational Webinar	January 17, 2019
Proposal Submission Due Date	February 10, 2020
Proposal Review Period	February 10 – February 28, 2020
Anticipated Selection Announcement	March 2, 2020
Anticipated Start of Award Funding	May 2020
Review of Phase 1	November 2020
Anticipated Selection Announcement for Phase 2 Awards	December 11, 2020

In order to submit a proposal, NSPIRES registration is required. The registration process includes first obtaining a Data Universal Number (DUNS), followed by registration in the System for Award Management (SAM). Applicants are required to maintain an active SAM registration, with current information loaded, at all times while competing for a federal award, and, if applicable, during the period of performance of the award.

Proposals shall be submitted through the NSPIRES website by the deadline of 11:59pm ET on February 10, 2020. If separate proposals are being submitted for more than one theme, then each proposal shall have a unique name that clearly indicates which theme is being addressed.

Additionally, 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, disability status, and citizenship status. Submission of this information is voluntary and is not a precondition of award.

Every effort will be made to announce selections within one month from the proposal submission deadline. Selection notifications will be communicated electronically via NSPIRES to the institution's Authorized Organization Representative (AOR) the PI. NSPIRES sends a decision notice via email requesting the PI or AOR to log into NSPIRES. This decision notice e-mail means that NSPIRES has been updated to indicate the status of a proposal. When a PI or AOR logs into NSPIRES, the following are examples of the types of decisions possible:

- A "declined" status means that: 1) NASA's review of the proposal is concluded; and 2) no NASA funds will be awarded to support the proposed project, or
- A "selectable (pending)" status means that the proposal review is ongoing.

- A "selected" status in NSPIRES means that the funding review and implementation process has begun. The funding process must be successfully completed before any funds can be transferred.

No pre-award costs are authorized. Proposers are strongly cautioned that only a NASA Grants/Contracting Officer may make commitments, obligations, or awards on behalf of NASA or authorize the expenditure of funds. **A commitment by NASA to fund an award is only made through a grant or cooperative agreement signed by a NASA Grants Officer.** A PI or organization that makes financial and/or personnel commitments in the absence of a grant or cooperative agreement signed by a NASA Grant Officer does so at its own risk. Please refer to Section 5.4 of the March 2018 version of the *NASA Guidebook for Proposers* for more information.

8 Reporting Requirements

Using required report formats, all award recipients shall: Submit performance data into the Office of Education Performance Management (OEPM) system or the data reporting system identified by NASA by January 31 of the next calendar year. Specifically, for activities taking place during Fiscal Year 2020, OEPM reporting will be due on January 31, 2021, and for Fiscal Year 2021, OEPM reporting will be due on January 31, 2022.

Submittal of accurate Student Data Tables and Expenditure Summaries is an additional requirement for this award. Student Data Tables will be used to verify Student Award numbers in OEPM as well as longitudinally track students after the conclusion of the award. Recipients shall report the status of longitudinal tracking results annually to the OSTEM. The template for these OEPM reports will be provided to the Consortia each year by the NASA Space Grant Program Office.

Within 90 days after the completion of the project, using required report templates, Recipients shall submit a final report with summary information from the entire project's period of performance. Recipients shall also complete all required reports as required by the NSSC as listed on the Terms and Agreements within the award document.

8.1 Phase 1 Requirements

This project will have the following specific reporting requirements, in addition to the requirements contained in 2 CFR § 200.327 and 2 CFR § 200.328. For performance reporting, a mid-term presentation to NASA via virtual conference shall be held; the purpose of this presentation is to discuss progress, completed milestones, remaining project schedule, cost performance and budget projection at completion. At the end of the award, the awardee shall report all final performance data into the OSTEM data reporting system. For financial reporting, awardees shall provide financial reports to NASA every other month. The final financial report shall be delivered during the award closeout process.

8.2 Phase 2 Requirements

Quarterly presentations to NASA via virtual conference shall be held to discuss progress,

completed milestones, remaining project schedule, cost performance and budget projection at completion. For financial reporting, awardees shall continue to provide financial reports to NASA every other month. The final financial report shall be delivered during the award closeout process.

9 Solicitation Summary:

Amount of award	Maximum funding amounts specified for each of three (3) themes in Section 5.1.2: Theme 1: $200k maximum Theme 2: $500k maximum Theme 3: $500k maximum
Expected number of awards	Theme 1: Two Awards Theme 2: Two Awards Theme 3: Two Awards
Start date	Award distribution is anticipated to begin in May 2020 for the Phase 1 period of performance, and January 2021 for the Phase 2 period of performance, based upon NSSC notification
Duration of award	Phase 1: May 2020 – December 2020 Phase 2: January 2021 – August 2021
Award type	Announcement of Opportunity
Solicitation release	December 11, 2019
Proposal due date	February 10, 2020
Anticipated award date	May 2020
Expected proposers	Current Space Grant Consortia Lead Institutions; limit of one proposal, per Space Grant lead institution, per theme
Page limit for the body of each proposal	Eight (8) pages maximum
Submission medium	Submit proposals via NSPIRES
Proposal contacts	Erica J. Alston, PhD Space Grant Deputy Manager Langley Research Center Mail Stop 033 Hampton, VA 23681 erica.j.alston@nasa.gov
Selection official	Chad Rowe Acting Space Grant Manager NASA Headquarters 300 E Street, Southwest Washington, DC 20546
Matching funds requirement	No matching funds are required. However, proposers shall identify and summarize any voluntary matching fund arrangements in their proposal.

10 Appendices

Appendix A: Artemis Goals and Activities

On December 7, 2017, Space Policy Directive 1 was signed and called for NASA to lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities. Beginning with missions beyond low-Earth orbit, the United States will lead the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations.

- NASA is called to develop a sustainable presence on the Moon, and then send astronauts to Mars. Artemis personifies NASA's path to the Moon as the name of the program to return astronauts to the lunar surface by 2024. It is the umbrella under which our lunar plans fall as part of our broader Moon to Mars approach. This program will see the first woman and next man set foot on and explore the Moon. The early Artemis missions include:

    - Artemis 1: First flight test of Space Launch System rocket and Orion spacecraft as an integrated system
    - Artemis 2: First flight of crew to the Moon aboard SLS and Orion
    - Artemis 3: First crew to the lunar surface (via a human landing system from the Gateway in lunar orbit)

As a result of Artemis, NASA will also establish a sustainable human presence on the Moon by 2028. Through the Artemis program, we will go to the Moon in a way we have never gone before as part of our Moon to Mars exploration approach. At the Moon, we will prove the technologies, capabilities and new business approaches for future missions to Mars.

Through the Artemis program:

- We are going quickly and sustainably with a reusable architecture.
- We are going with commercial and international partners to explore faster and explore more together.
- We will bring new knowledge and opportunities.
- We will use the resources of the Moon to enable farther exploration.
- We will prove out the technologies that will take us to Mars and beyond.

Appendix B: Sample Milestone Chart for Phase 1 Proposed Activities

Instructions: Proposers shall provide an estimate as to when a proposed activity will occur. The items listed below shall align with the content of the proposal, budget, and budget narrative.

Activity	Mar - 20	Apr - 20	May -20	Jun - 20	Jul- 20	Aug- 20
Example: Theme # Activity						

Appendix C: Sample Budget Tables

	Phase 1 Proposed Budget		
	NASA Funds	**Cost-Share (if applicable)**	**Total Funding**
A. Personnel/ Direct Labor			
1. Principal Investigator/ Director			
2. Program Manager			
3. Research Associate			
4. Staff Support			
Total Salaries			
B. Fringe Benefits			
1. Principal Investigator/ Director			
2. Program Manager			
3. Research Associate			
4. Staff Support			
Total Fringe			
C. Equipment			
D. Materials and Supplies			
E. Services			
F. Domestic Travel			
G. Theme # Activities			
1. Activity One			
2. Activity Two			
3. Activity Three			
Total Direct Project Costs			
H.. Subcontracts			
I. Total Direct Costs			
J. Indirect Cost (% rate of item I)			
Total Costs			

	Phase 2 Proposed Budget (if applicable)		
	NASA Funds	**Cost-Share (if applicable)**	**Total Funding**
A. Personnel/ Direct Labor			
1. Principal Investigator/ Director			
2. Program Manager			
3. Research Associate			
4. Staff Support			
Total Salaries			
B. Fringe Benefits			
1. Principal Investigator/ Director			
2. Program Manager			
3. Research Associate			
4. Staff Support			
Total Fringe			
C. Equipment			
D. Materials and Supplies			
E. Services			
F. Domestic Travel			
G. Theme # Activities			
1. Activity One			
2. Activity Two			
3. Activity Three			
Total Direct Project Costs			
H.. Subcontracts			
I. Total Direct Costs			
J. Indirect Cost (% rate of item I)			
Total Costs			