



University Leadership Initiative (ULI) Applicants Workshop

Solicitation: NNH18ZEA001N-ULI2

Transformative Aeronautics Concepts Program

June 27, 2019

Koushik Datta
ULI Technical POC
University Innovation Project Manager





Applicants Workshop Overview

- **Purpose:** Provide information on NASA Aeronautics Research Mission Directorate's (ARMD) University Leadership Initiative (ULI)
- **Agenda:**
 - ULI Solicitation Overview
 - Questions and Answers (Q&A)
- **Materials available:**
 - Solicitation and ULI-specific Q&A currently available from NSPIRES at <https://bit.ly/2QvDrTT>
 - Slides, video recording, written Q&A will be available at ULI site <https://nari.arc.nasa.gov/applicantsworkshop3>
 - NRA *Guidebook for Proposers* available at <https://www.hq.nasa.gov/office/procurement/nraguidebook/>
- **Notice:**
 - Material presented at this workshop reflects best known information
 - This session, including all questions and answers will be recorded and posted
 - In case there are any differences between the solicitation and material presented at this workshop, the solicitation will take precedence



Two separate NASA solicitations are open under ROA-2018 now

- Solicitation NNH18ZEA001N-SWS at web page <https://bit.ly/2WEOTTn>
 - **This is not the ULI solicitation**
 - Proposal due date of July 16, 2019
 - NRA Manager is Stephen A. Jacklin
- Solicitation NNH18ZEA001N-ULI2 at web page <https://bit.ly/2QvDrTT>
 - **This is the University Leadership Initiative (ULI) solicitation**
 - Step-A proposal due date of August 27, 2019
 - NRA Technical POC is Koushik Datta
 - Applicants Workshop is about this solicitation

ULI2 on NSPIRES

From <https://nspires.nasaprs.com/external/> select Solicitations
Under Solicitations choose Open, then search for NNH18ZEA001N-ULI2 and
Select link associated with D.4 University Leadership Initiative 2 (ULI2) [NNH18ZEA001N-ULI2](#)

The screenshot shows the NSPIRES website interface. The top navigation bar includes the NASA logo, the NSPIRES logo, and links for Home and Login. Below this is a secondary navigation bar with links for Solicitations and Help. The left sidebar contains a menu with options: NASA Research, Solicitations, View Solicitations, Future, Open, and Closed/Past Selected. The main content area is titled 'Aeronautics Research Mission Directorate NASA Research Announcement D.4 University Leadership Initiative 2 (ULI2)'. It displays the solicitation number 'Solicitation: NNH18ZEA001N-ULI2'. Under the 'Dates' section, there is a table with two rows: 'Release' with the date 'Mar 21, 2018' and 'Step-A Proposals Due' with the date 'Aug 27, 2019'. A 'Create' button is positioned to the right of the 'Step-A Proposals Due' date. To the right of the dates are three sections: 'Announcement Documents' with links for 'ROA 2018 Complete Solicitation as of May 24, 2019', 'ROA 2018 NRA Main Body as of May 24, 2019', and 'University Leadership Initiative 2 (ULI2)'; 'Other Documents' with links for 'An interested partners list (Lead, Partner)', 'Questions and Answers for ULI (Updated June 3, 2019)', and 'NASA Aeronautics Strategic Implementation Plan (topics 1-7 correspond to an ARMD strategic thrust described further in this Plan)'; and 'Program Element Information' with a link for 'RESEARCH OPPORTUNITIES IN AERONAUTICS 2018 (ROA-2018)'. At the bottom, a 'Notices' section contains two bullet points: 'The electronic proposal must be submitted in its entirety by 5:00 p.m. Eastern Time on the proposal due date.' and 'Amendment 4 to the NASA ARMD Research Opportunities in Aeronautics – 2018 (ROA-2018) NRA has been posted on the NSPIRES site. University Leadership Initiative 2'.

NASA Research
Solicitations
View Solicitations
Future
Open
Closed/Past Selected

Aeronautics Research Mission Directorate
NASA Research Announcement
D.4 University Leadership Initiative 2 (ULI2)
Solicitation: NNH18ZEA001N-ULI2

Dates

Release	Mar 21, 2018	
Step-A Proposals Due	Aug 27, 2019	Create

Announcement Documents

- > [ROA 2018 Complete Solicitation as of May 24, 2019](#)
- > [ROA 2018 NRA Main Body as of May 24, 2019](#)
- > [University Leadership Initiative 2 \(ULI2\)](#)

Other Documents

- > [An interested partners list \(Lead, Partner\)](#)
- > [Questions and Answers for ULI \(Updated June 3, 2019\)](#)
- > [NASA Aeronautics Strategic Implementation Plan \(topics 1-7 correspond to an ARMD strategic thrust described further in this Plan\)](#)

Program Element Information

- > [RESEARCH OPPORTUNITIES IN AERONAUTICS 2018 \(ROA-2018\)](#)

Notices

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



<https://www.nasa.gov/aeroresearch/strategy>

What: Fund university-led innovation to address system-level challenges in ARMD's Strategic Implementation Plan

Why:

1. Achieve aviation outcomes in the ARMD Strategic Implementation Plan
2. Transition research results to stakeholders for continuation of research
3. Provide opportunities for undergraduate and graduate students to participate in aeronautics research
4. Promote diversity in aeronautics with inclusion of minority-serving institutions and underrepresented university faculties

How:

- University teams propose new, innovative ideas that complement the NASA ARMD portfolio and support the U.S. aviation community
- University teams propose their own aeronautics technical challenges, defining multi-disciplinary solutions, establishing peer review mechanisms, and applying innovative teaming strategies to strengthen the research impact
- Principal Investigators are expected to actively explore transition opportunities



Leadership Aspects of ULI

- Technical
 - Define unique technical challenges to accomplish strategic thrust outcomes, and plan multi-disciplinary research activities to address those challenges
 - Maintain primary responsibility for assessing research progress and quality by establishing peer review mechanisms
- Organizational
 - Apply innovative teaming strategies to strengthen potential impact
 - Build teams that leverage expertise in multiple disciplines
 - Ensure meaningful roles and effective integration across all contributors
 - Promote education of the next generation of engineers
- Entrepreneurial
 - Maintain connections with key stakeholders, understand their needs, and propose necessary course corrections to meet those needs
 - Actively explore technology transition opportunities to U.S. aviation industry and NASA ARMD

ULI Transition Goals

Transition can occur in a number of ways, including the following:

- Creates a new product line in U.S. industry or a new ARMD project
- Whole ULI concept is transitioned to U.S. industry/ARMD project
- Part of the ULI concept is transitioned to U.S. industry/ARMD project
- ULI findings impact direction of U.S. industry/ARMD

Proposals Solicited in 8 Topics

Topics described by the Six Thrusts
in the Strategic Implementation Plan

1. Safe, Efficient Growth in Global Operations (Strategic Thrust 1)
2. Innovation in Commercial Supersonic Aircraft (Strategic Thrust 2)
3. Subsonic Transport (Strategic Thrust 3a)
4. Civil Aircraft that Incorporate Vertical Lift Capability (Strategic Thrust 3b)
5. Transition to Alternative Propulsion and Energy (Strategic Thrust 4)
6. Real-Time System-Wide Safety Assurance (Strategic Thrust 5)
7. Assured Autonomy for Aviation Transformation (Strategic Thrust 6)
8. Materials and Structures for Next-Generation Aerospace Systems



Topic 8 summarized
in the ULI NRA

<https://www.nasa.gov/aeroresearch/strategy>

Projected Distribution of Awards

NASA anticipates investing in four awards, nominally two awards with three-year duration and two awards with four-year duration

- Proposals are invited for 3-4 year range
- Nominal budgets in the \$1-2M range per award per year
 - Actual budget usage by year by the awardees is important to NASA and so proposed budgets must take into account ramp ups within the team
- To promote ULI portfolio balance, NASA anticipates (at time of release of NRA):
 - One award in Topic 7 (Assured Autonomy for Aviation Transformation)
 - One award in Topic 8 (Materials and Structures for Next-Generation Aerospace Systems)
 - Two awards in any of the eight topics (1-8)
- No guarantee that the awards will be allocated as described. Depends on the quality of the proposals received, the scope of the proposed work, funding availability, and program needs
- Selecting Official has the option to consider program portfolio priorities, cost sharing and budget constraints when making the final selection

Topics described by the Six Thrusts in the Strategic Implementation Plan

1. Safe, Efficient Growth in Global Operations (Strategic Thrust 1)
2. Innovation in Commercial Supersonic Aircraft (Strategic Thrust 2)
3. Subsonic Transport (Strategic Thrust 3a)
4. Civil Aircraft that Incorporate Vertical Lift Capability (Strategic Thrust 3b)
5. Transition to Alternative Propulsion and Energy (Strategic Thrust 4)
6. Real-Time System-Wide Safety Assurance (Strategic Thrust 5)
7. Assured Autonomy for Aviation Transformation (Strategic Thrust 6)
8. Materials and Structures for Next-Generation Aerospace Systems



<https://www.nasa.gov/aeroresearch/strategy>

Topic 8 summarized in the ULI NRA



Technical Challenges and Research

- Identify the most critical technical challenges that must be solved to achieve the desired outcomes in the topic area
 - Technical challenges represent distinct barriers that must be overcome
 - Success and progress is measurable
 - Different from technical challenges developed by NASA-internal teams and other ULI awardees
 - Summaries of these Internal NASA technical challenges are provided in solicitation
 - Should be based on what proposer believes are important barriers to overcome (not compatibility with existing NASA technical challenges)
- Propose independent, innovative research activities to solve the technical challenges, including developing the success criteria, progress indicators, and technical approach
 - Bring forward system-level, revolutionary concepts
 - Incorporate multi-disciplinary integration, including those outside of traditional aeronautics disciplines (technology convergence)
 - Offer novel, high technical risk approaches that open avenues for accelerated progress
 - Research products could include technologies, operational concepts, methods, design tools, models, or other technical advancements
- Understand the global context surrounding the proposed work, including policy and economic challenges that complement the technical work

University Leadership – Remove critical barriers in aviation



Teaming Requirements

- Lead organization for ULI proposal must be an accredited, degree-granting U.S. college or university
- Team members may include:
 - Other U.S. colleges or universities
 - U.S. industry members
 - Other departments at the principal investigator's institution
 - Non-profit organizations in the U.S.
 - Federally-Funded Research and Development Centers (FFRDCs)
 - Other U.S.-based entities
- Historically Black Colleges and Universities (HBCU) and other minority-serving institutions strongly encouraged to apply
- No foreign collaboration
- No NASA team members



Desired Attributes of a ULI Team

- Universities are asked to build a talented, diverse, and cross-disciplinary team to explore innovative, integrated solutions toward the technical challenges
 - Ensure meaningful roles and effective integration across all contributors
- Inclusive teaming methods that promote diversity and mentoring of faculty from HBCU and/or other minority-serving institutions
 - Encouraged to include team members that are less-established or have less prior experience working on NASA Aeronautics projects
 - Effective integration and mentoring of these team members represents an important part of university leadership role
- Principal investigators will actively explore transition opportunities and pursue follow-on funding from stakeholders and industrial partners during the course of the award
 - Inclusion of relevant stakeholders and industrial partners either as team members or collaborators

University Leadership - Reach broadly across educational community



Interested Partners List - https://nari.arc.nasa.gov/uli_partners

NASA Aeronautics Research Mission Directorate University Leadership Initiative Interested Partner List

For ULI, the lead (proposing) organization must be an accredited, degree-granting U.S. college or university. Partners may include other U.S. colleges and universities, U.S. companies, U.S. non-profit organizations, U.S. federally funded research and development centers (FFRDC).

To be listed as an interested lead or partner, please send electronic mail to hq-univpartnerships@mail.nasa.gov with "ULI Partnerships" in the subject line and include the information below.

Note: Currently, this Partners List webpage is averaging 82 unique hits per day (counting returning users, approximately 178 hits per day).

Organization Name	Organization POC	POC E-mail	Area of Research Interest	Lead/Partner
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https://nari.arc.nasa.gov/uli_partners



Peer Review and Education

- Establish a strong, non-advocate, peer review process for assessing relevance, technical quality, and performance
 - Teams choose their own peer review process to maximize its effectiveness
 - Identify reviewers from academia, industry, and government. Engage them throughout the year and in annual meetings. In many cases they choose peer reviewers with an eye towards research transition.
 - No NASA peer reviewers
- Promote next generation of engineers, undergraduates and graduates, with the skills to lead U.S. aviation into the future
 - ULI is looking to engage undergraduate students and stimulate them with meaningful research work
 - Innovative training of student team members to become future leaders

University Leadership – Develop the next generation of engineers



NASA Role in ULI

- Enable and provide support rather than technical oversight
- Support ULI team in following areas:
 - Provide additional insight on market trends and offer suggestions to support continued alignment with stakeholder needs
 - Work with PI to explore opportunities for technology transition to other ARMD programs and external community
 - Facilitate contacts with NASA subject matter experts and facility owners
- Provide oversight that relies primarily on input from team's peer review process
- Host ULI technical interchanges and networking opportunities

Proposal Process

- Step-A proposal due August 27, 2019
 - 5 pages for Scientific/Technical/Management section
 - Focusing on objectives, partially-defined technical challenges, overall approach, teaming and education strategy, etc. (see NRA for full details)
- NASA will review and make selections of Step-A proposals which will be invited to submit a Step-B proposal
 - All proposers will be notified
- NASA will hold an optional, virtual Industry Networking Opportunity (Oct-Nov timeframe)
 - Industry may offer insight into connections between the proposed concepts and the needs of the aviation community
 - Facilitate contacts between Step-B proposal teams and U.S. aviation industry for the purposes of exploring potential partnerships
 - Information exchange for technology transition
- Step-B proposal due 60 days from notification
 - 25 pages for Scientific/Technical/Management section
 - Full proposal with completed technical challenges, research activities, and detailed approach, etc. (see NRA for full details)

Proposal Evaluation Criteria

- Step-A Proposal
 - Relevance to ARMD Objectives (weight 40%)
 - Technical Merit (weight 40%)
 - Innovative Teaming and Education (weight 20%)
- Step-B Proposal
 - Relevance to ARMD Objectives (weight 25%)
 - Technical Merit (weight 25%)
 - Innovative Teaming and Education (weight 20%)
 - Effectiveness of the Proposed Work Plan (weight 15%)
 - Cost (weight 15%)

Some Notes for Step-B Proposals

- Industry Networking Opportunity (Optional for Proposers)
 - The decision to participate or to incorporate ideas obtained from the industry networking opportunity into the Step-B proposal is entirely at the proposer's discretion
 - NASA will evaluate Step-B proposals based on their own merit
 - No consideration as to whether Step-B proposal was adjusted because of the industry networking opportunity
- Proposed Budget
 - Emphasis on accurate cost estimates, based on what is needed
- Cost Sharing
 - Proposers may include cost sharing in their proposals at their own discretion
 - Cost sharing is not an evaluation criteria
 - If cost sharing allows teams to increase the technical merit and impact of their work, then will affect those evaluation criteria and the Value-Cost scoring metric
 - Cost sharing may also be considered by the Selecting Official in the final selection of awards



ULI and Previous Awardees

ULI Website: <https://nari.arc.nasa.gov/uli>

- Round 1: <https://nari.arc.nasa.gov/ULIround1>
- Round 2: <https://nari.arc.nasa.gov/ULIround2>
- Follow Round 3: <https://nari.arc.nasa.gov/ULIround3>
 - Interested Partners List: https://nari.arc.nasa.gov/uli_partners
 - Today's slides and recording will be available at:
<https://nari.arc.nasa.gov/applicantsworkshop3>

Tips

- Read the ULI NRA (<https://bit.ly/2wq6Oxz>) carefully
- Read the ARMD Strategic Implementation Plan
- Questions not answered in ULI NRA may be answered in the ROA-2018
- Web site for submission of proposal via NSPIRES:
<https://nspires.nasaprs.com/external>
- Proposal preparation and submission instructions:
 - General instructions are in the *Guidebook for Proposers* available at <https://www.hq.nasa.gov/office/procurement/nraguidebook/>
 - ULI-specific instructions are in the ULI NRA
- Have a question
 - Check ULI NRA, ROA-2018, and the ULI Q&A document
 - ULI Q&A document: <https://bit.ly/31xF6gM>
 - Q&A document will be updated as questions are answered. Check regularly
 - Email questions to: HQ-UnivPartnerships@mail.nasa.gov



Questions and Answers

Quickest way to resolve Technical and Procurement questions about this NRA is to e-mail questions to: <HQ-UnivPartnerships@mail.nasa.gov>

NASA points of contact (POC)

- Procurement POC: Ken Albright
<kenneth.e.albright@nasa.gov>, (228) 813-6127
- Technical POC: Koushik Datta
<koushik.datta@nasa.gov>, (650) 604-2195
- NSPIRES help desk:
<nspires-help@nasaprs.com>, (202) 479-9376



Questions and Answers

- 1. Can the same institution be the lead institution for separate proposals responding to different ULI topics?**
 - Yes

- 2. Are researchers allowed to be members of multiple teams with different lead institutions?**
 - Yes. The researchers must be identified as team members in each proposal they participate in.

- 3. Can a non-US citizen, studying/working at a university, be included on the team?**
 - Generally yes, the eligibility requirements of the ROA-2018 apply to the proposing organization and not the individual. However, it is possible that export control requirements must be taken into account for members of a proposing organization who are not U.S. citizens or do not have permanent resident status.

Questions and Answers

- 5. For Topic 8, is there any more information available similar to the near-term, mid-term and far-term outcomes documented in the Strategic Implementation Plan?**
- The information in the ULI solicitation and in the Strategic Implementation Plan is all the available outcome information for Topic 8.
- 6. What portion of my work has to be in autonomy to propose under Topic 7?**
- NASA has no specific rule on this. Generally, Topic 7 (Assured Autonomy for Aviation Transformation) proposers should have a large portion of their proposed work be related to autonomy. As the proposer you have to make the determination whether it is best proposed under Topic 7 or under a different topic.



Additional Questions?

Taken in the following order

- Questions from the Adobe Connect chat window
- Questions over the telecom line



Thanks for participating!

Quickest way to resolve Technical and Procurement questions about this NRA is to e-mail questions to: <HQ-UnivPartnerships@mail.nasa.gov>

NASA points of contact (POC)

- Procurement POC: Ken Albright
<kenneth.e.albright@nasa.gov>, (228) 813-6127
- Technical POC: Koushik Datta
<koushik.datta@nasa.gov>, (650) 604-2195
- NSPIRES help desk:
<nspires-help@nasaprs.com>, (202) 479-9376