# LaSPACE

## Research Enhancement Award (REA) Program

Offered by the Louisiana Space Grant Consortium

Under the authority of the
NASA Space Grant College and Fellowship Program

**Louisiana Space Grant Consortium (LaSPACE)**
**364 Nicholson Hall, Department of Physics and Astronomy**
**Louisiana State University, Baton Rouge, LA 70803**
**225.578.8697 | http://laspace.lsu.edu/ | laspace@lsu.edu**

*Revised, April 2022*
*All previous versions of this program's guidelines are null and void.*

# REA Program Summary Page

## About Research Enhancement Awards (REA)

The LaSPACE Research Enhancement Awards (REA) Program is intended to provide support for faculty (and students) at LaSPACE member institutions, particularly aimed at the emerging researcher or an established researcher who wishes to pursue new research directions, for the development of projects, contacts, and collaborations that will bring Louisiana scientists into the mainstream of NASA related research activity, thereby increasing their chances to successfully compete in the aerospace R&D marketplace. As with all LaSPACE Programs, minority participation is strongly encouraged. The REA Program is funded by state matching funds, through the Louisiana Board of Regents Support Fund. The awards are intended to develop expertise and to contribute to research competitiveness. However, awards are not intended purely to support faculty salaries or student stipends. It is anticipated (and advised) that students will be involved in REA projects, but the overriding goal is the development of research capabilities and infrastructure in support of the country's space/aerospace endeavors. In that regard, contacts/collaborations/ties to NASA centers and NASA researchers are strongly encouraged.

## Program Summary

- A **Notice of Intent (NOI)** to propose is required for the REA program. NOIs do not need to be routed for institutional approvals/signature the way the final proposal needs to be.
- The overall goal for this Program is to effectively utilize the resources available through LaSPACE as incentive for faculty and students: 1) to develop research competitiveness, 2) to develop new research projects or directions, and 3) to foster collaborations with NASA researchers, federal laboratories, and with the business/industry community.
- Only tenured, tenure-track, or research faculty at the level of Assistant/Research Professor or higher affiliated with LaSPACE campuses are eligible to apply. In cases where support is requested for visiting scientists, the application must be submitted by, and be the responsibility of, a LaSPACE institution faculty member. On ALL proposals, only one PI can be proposed. Additional personnel should be listed as researchers.
- The final invoices and a final technical report must be submitted to the LaSPACE office within 30 days of the project end date. Photographs and copies of all papers, presentations, and posters generated should be shared with LaSPACE as they occur and collected/referenced in the final report. Final Report guidelines can be downloaded from the LaSPACE website's document center.

## Proposal Submissions

- Submit all properly executed proposals via email as fully searchable pdf documents to laspace@lsu.edu by **11:59 pm on Friday, June 10, 2022.**
- Important Dates:
  - Proposal Release Date: Friday, April 1, 2022
  - **NOI Due Date: Friday, May 20, 2022**
  - **Proposal Due Date: Friday, June 10, 2022**
  - Anticipated Award Announcements: July 2022
  - Award Period of Performance: 09/01/2022 - 08/31/2023

# LaSPACE General Guidelines

## Introduction to the Louisiana Space Grant Program

The Louisiana Space Grant Consortium (LaSPACE) is a Designated Consortium in the NASA National Space Grant and Fellowship Program network, which was designed to network colleges, universities, and state education boards with partners in business, industry, and the non-profit sector in order to promote, develop, and strengthen aerospace science, research, technology, education, and awareness. Our mission is "To enhance Space and Aerospace related research, education, and public awareness throughout the State of Louisiana and thereby promote math/science education, training of professionals, and economic development." LaSPACE promotes scientific research, workforce development, and public outreach to develop and strengthen long-term research capabilities within Louisiana that will make significant contributions to the research and technology Mission Directorates of NASA while supporting the goals of the state.

### Basis of Authority

The Louisiana Space Grant Consortium (LaSPACE) currently comprises Louisiana public and private colleges and universities in addition to business/industry partners and other organizations. The consortium is funded jointly by the National Aeronautics and Space Administration (NASA) and by the Louisiana Board of Regents Support Fund (BORSF). The consortium is administered by the LaSPACE Council, under the aegis of NASA and the Board of Regents. The basis of authority for this and other programs of LaSPACE rests in part on the above funding. It is important, therefore, to note that the implementation of LaSPACE-supported projects must conform to applicable Federal and State regulations, in general, and to the NASA stipulations, in particular.

## NASA Agency Information

### NASA 2018 Strategic Plan

NASA's 2018 strategic plan aligns the Agency's future activities along three strategic themes of Discover, Explore, and Develop, as well as a fourth theme focused on the activities that will enable the Agency's mission.

- DISCOVER references NASA's enduring purpose of scientific discovery.
- EXPLORE references NASA's push to expand the boundaries of human presence in space.
- DEVELOP references NASA's broad mandate to promote the technologies of tomorrow.
- ENABLE references the capabilities, workforce, and facilities that allow NASA to achieve its Mission.

The complete plan can be downloaded here.

### NASA Vision

To discover and expand knowledge for the benefit of humanity.

### NASA Mission

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

# NASA Office of STEM Engagement

NASA's journeys have propelled technological breakthroughs, pushed the frontiers of scientific research, and expanded our understanding of the universe. These accomplishments, and those to come, share a common genesis: education in science, technology, engineering, and math. NASA's Office of STEM Engagement (OSTEM) delivers tools for young Americans and educators to learn and succeed. OSTEM seeks to:

- Create unique opportunities for students and the public to contribute to NASA's work in exploration and discovery.
- Build a diverse future STEM workforce by engaging students in authentic learning experiences with NASA people, content, and facilities.
- Strengthen public understanding by enabling powerful connections to NASA's mission and work.

To achieve these goals, NASA's Office of STEM Engagement strives to increase K-12 involvement in NASA projects, enhance higher education, support underrepresented communities, strengthen online education, and boost NASA's contribution to informal education. The intended outcome is a generation prepared to code, calculate, design, and discover its way to a new era of American innovation.

The National Space Grant College and Fellowship Program, from which LaSPACE is derived, is a component of the NASA Office of STEM Engagement's larger portfolio, managed at NASA Headquarters in Washington D.C., in alignment with the NASA Mission Directorates, and engagement with all NASA centers and facilities.

NASA Office of STEM Engagement, and by extension LaSPACE, supports the four strategic goals detailed in the 2018 plan. Research and design work supported by Space Grant or NASA EPSCoR must align with one or more of these strategic goals and corresponding objectives.

# NASA Mission Directorates (MD)

*Research and technology priorities are aligned with one or more of NASA's Mission Directorates:*

The **Science Mission Directorate (SMD)** expands the frontiers of Earth science, heliophysics, planetary science, and astrophysics. Using robotic observatories, explorer craft, ground-based instruments, and a peer-reviewed portfolio of sponsored research, SMD seeks knowledge about our solar system, the farthest reaches of space and time, and our changing Earth.

The **Aeronautics Research Mission Directorate (ARMD)** transforms aviation with research to dramatically reduce the environmental impact of flight, and improves aircraft and operations efficiency while maintaining safety in increasingly crowded skies. ARMD also generates innovative aviation concepts, tools, and technologies for development and maturation by the aviation community.

The **Space Technology Mission Directorate (STMD)** pursues transformational technologies that have high potential for offsetting future mission risk, reducing cost, and advancing existing capabilities. STMD uses merit-based competition to conduct research and technology development, demonstration, and infusion of these technologies into NASA's missions and American industry. This mission directorate is being refocused as a new Exploration Research & Technology (ER&T) organization to support exploration as a primary customer.

The **Human Exploration and Operations Mission Directorate (HEOMD)** has been divided back into two MDs. The **Exploration Systems Development Mission Directorate (ESDMD)** will define and manage systems development for programs critical to Artemis and plan the Moon to Mars exploration approach in an integrated manner. The **Space Operations Mission Directorate (SOMD)** will focus on launch and space operations,

including the International Space Station, the commercialization of low-Earth orbit, and eventually, sustaining operations on and around the Moon.

All NASA subprograms must relate to and support one or more of these directorates. Likewise, all programs supported by LaSPACE must support the NASA organization, align with the NASA Strategic Plan, and support the goals of the Office of STEM Engagement.

# NASA MD Contacts for University Researchers

**Science Mission Directorate (SMD)**
POC: Kristen Erickson, Director, Science Engagement Partnerships Phone: (202) 358-1017, kristen.erickson@nasa.gov

**The Aeronautics Research Mission Directorate (ARMD)**
POC: Dave Berger, OSTEM Embed for Aeronautics, Phone: (661) 276-5712, dave.e.berger@nasa.gov

**Space Technology Mission Directorate (STMD)**
POC: Damian Taylor, SBIR and STTR Mission, Directorate Liaison Phone: (202) 358-1432, damian.taylor@nasa.gov

**Exploration Systems Development Mission Directorate (ESDMD)**
POC: Greg Chavers, DAA for HEO System Engineering & Integration, Phone: (256) 544-0494, greg.chavers@nasa.gov

**Space Operations Mission Directorate (SOMD)**
POC: Marc Timm Phone: (202) 358-0373, marc.g.timm@nasa.gov

# NASA Center Liaisons

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|---|---|
| Ames Research Center, *Veronica Wilson*<br>Space Grant Liaison/Specialist<br>Phone: (661) 276-2970<br>Veronica.l.wilson@nasa.gov | Kennedy Space Center, *Theresa Martinez*<br>Education Program Specialist<br>Phone: (321) 867-0590<br>Theresa.c.martinez@nasa.gov |
| Armstrong Flight Research Center, *Veronica Wilson*<br>Space Grant Liaison/Specialist<br>Phone: (661) 276-2970<br>Veronica.l.wilson@nasa.gov | Langley Research Center, *Erin Reed*<br>Space Grant Liaison/Specialist<br>Phone: (419) 621-3350<br>Erin.m.reed@nasa.gov |
| Goddard Space Flight Center, *James L. Harrington*<br>Computer Research and Development/Space Grant Specialist<br>Phone: (301) 286-4063<br>James.L.Harrington@nasa.gov | Glenn Research Center, *Mark David Kankam, Ph.D.*<br>University Affairs Officer/Space Grant Specialist<br>Phone: (216) 433-6143<br>Mark.D.Kankam@nasa.gov |
| Jet Propulsion Laboratory, *Linda Rodgers or Petra Kneissl*<br>Space Grant Program Specialists<br>Linda Phone: (818) 354-3274;<br>Linda.L.Rodgers@jpl.nasa.gov<br>Petra Phone: (818) 201-8805<br>Petra.A.Kneissl-milanian@jpl.nasa.gov | Marshall Space Flight Center, *Kelly McCarthy*<br>Education Program Specialist<br>Phone: (228) 688-8228<br>kelly.mccarthy@nasa.gov |
| Johnson Space Center, *Misti Moore*<br>Education Program Specialist<br>Phone: (281) 483-3065<br>misti.m.moore@nasa.gov | Stennis Space Center, *Kelly McCarthy*<br>Education Program Specialist<br>Phone: (228) 688-8228<br>kelly.mccarthy@nasa.gov |

# LaSPACE Program

The Louisiana Space Grant Consortium, part of the National Space Grant College and Fellowship Program and in partnership with the Louisiana Board of Regents, supports programs at affiliated academic institutions and other Louisiana organizations that address the NASA mission, federal CoSTEM goals, and state education and economic priorities. LaSPACE programs for Research, Higher Education, Workforce Development, K-12 Teacher Development, and Public Outreach, strengthen the Science, Technology, Engineering, and Math (STEM) education needed for a diverse technical workforce, and develops the research and economic infrastructure to boost Louisiana's contribution to the aerospace frontier.

## Goals and Objectives

LaSPACE Goals and Objectives are directly aligned with NASA Office of STEM Engagement and National Program Emphases on Diversity, Workforce Development, Community Colleges, Pre-College teacher engagement, Competitiveness, NASA Research Relevance, Industry Relations, and State Government Involvement. The updated LaSPACE 2019 Strategic Plan describes a comprehensive program of Research, Education, and Service via 5 strategic goals, each in line with one or more NASA OSTEM objectives , to (1) Foster aerospace research and education (OSTEM 1.1, 1.2, 2.1, 2.2, 2.4, 3.2), (2) Foster and support hands-on experiential programs for higher education students (2.1, 2.2, 2.3, 2.4), (3) Contribute to pre-college STEM education excellence (1.2, 3.1), (4) Engage and educate the general public (3.1), and (5) Maintain an effective consortium of institutions involved in LaSPACE.

Major objectives for the achievement of these goals includes (1) Support for student and faculty research at consortium institutions, (2) Strengthening interactions between Louisiana aerospace industries, faculty, and students, (3) Increased participation in Space Grant programming with the state's HBCUs and Community & Technical Colleges, (4) Provide support to undergraduate and graduate students for research, design, and internship opportunities, (5) Engage students in experiential learning environments, (6) Support middle and high school educator training, and (7) Foster informal education and public outreach. Proposals to LaSPACE programs should explicitly support one or more of these seven objectives.

# LaSPACE Program Administration & Institutional Coordinators

General administration and management is the responsibility of the LaSPACE Staff headquartered at LSU. Questions about applications to any LaSPACE programs should be directed to the program management team via the general laspace@lsu.edu email address. Unless otherwise directed, all proposals, invoices, reports, and queries should also be submitted via email to the program email address (laspace@lsu.edu). Please refer to the LaSPACE FAQs before contacting LaSPACE management and/or coordinators.

LaSPACE Program Office, laspace@lsu.edu, 225-578-8697
LSU Department of Physics & Astronomy |364 Nicholson Hall, Baton Rouge, LA 70803
T. Gregory Guzik, Director, tgguzik@lsu.edu | Colleen H. Fava, Assistant Director, colleenf@lsu.edu |
Meaghin Woolie, Program Manager, mwooli2@lsu.edu | Doug Granger, Student Flight Program Manager,
dgrang2@lsu.edu | Aaron Ryan, Student Flight Program Instructor & Outreach Coordinator, aryan21@lsu.edu

Additionally, all member institutions have appointed an institutional coordinator who sits on the LaSPACE Advisory Council and is available to discuss opportunities and processes related to LaSPACE programs. Contact information for all affiliates is provided below. For institutions with a vacancy, contact the program manager listed above.

# LaSPACE Affiliate Institutional Coordinators

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|---|---|---|---|
| **Baton Rouge Community College (BRCC)** | Sandra Guzman | guzmans@mybrcc.edu | 225-216-8213 |
| **BREC / Highland Road Park Observatory (HRPO)** | Christopher Kersey | o@brec.org | 225-768-9948 |
| **Cain Center for STEM Literacy (Cain Center)** | Frank Neubrander | fneubr1@lsu.edu | 225-578-4082 |
| **Delgado Community College (DCC)** | Raymond Duplessis | rduple@dcc.edu | 504-671-6419 |
| **Dillard University (Dillard)** | Abdalla Darwish | adarwish@dillard.edu | 504-816-4840 |
| **East Baton Rouge Parish Library (EBRPL)** | Mary Stein | mstein@ebrpl.com | 225-231-3710 |
| **Grambling State University (GSU)** | Matthew F. Ware | waremf@gram.edu | 318-274-2391 |
| **LaSTEM at LA BOR (LaSTEM)** | Clint Coleman | Clint.coleman@laregents.edu | 504-352-4891 |
| **Louisiana Arts and Science Museum (LASM)** | vacant | vacant | vacant |
| **La Board of Elementary & Secondary Education (BESE)** | Ann Wilson | ann.wilson@la.gov | 225-342-0140 |
| **Louisiana Board of Regents (BOR)** | Jessica Patton | jessica.domingue@la.gov | 225-342-4253 |
| **Louisiana Business and Technology Center (LBTC)** | Roy Keller | rkeller@lsu.edu | 225-578-3985 |
| **Louisiana Economic Development (LED) FastStart** | Susana Schowen | susana.schowen@la.gov | 225-342-5729 |
| **Louisiana Public Broadcasting (LPB)** | Christina Melton | cmelton@lpb.org | 225-757-4215 |
| **Louisiana State University and A&M College (LSU)** | Stephen D. Beck | sdbeck@lsu.edu | 225-578-5833 |
| **Louisiana State University at Alexandria** | Gerard Dumancas | gdumancas@lsua.edu | 318-427-4436 |
| **Louisiana State University Agricultural Center (LSU-Ag)** | Wade Baumgartner | wbaumgartner@agcenter.lsu.edu | 225-578-7742 |
| **Louisiana State University Health Sciences (LSUHSC)** | Lynn Harrison | lynn.clary@lsuhs.edu | 318-675-4213 |
| **Louisiana State University of Shreveport (LSUS)** | Urska Cvek | urska.cvek@lsus.edu | 318-795-4266 |
| **Louisiana Tech University (LaTech)** | Mary Caldorera-Moore | mcmoore@latech.edu | 318-257-2207 |
| **Loyola University (Loyola)** | Martin McHugh | mmchugh@loyno.edu | 504-865-2451 |
| **McNeese State University (McNeese)** | Ning Zhang | nzhang@mcneese.edu | 337-475-5873 |
| **National Center for Biomedical Research & Training (LSU-NCBRT)** | Jason Krause | jkrause@ncbrt.lsu.edu | 225-578-0285 |
| **Nicholls State University (Nicholls)** | Matt Marlow | matthew.marlow@nicholls.edu | 985-448-4576 |
| **Northshore Technical Community College (NTTC)** | Chuck Crabtree | charlescrabtree@northshorecollege.edu | 985-545-1231 |
| **Northwestern State University of Louisiana (NSULA)** | Anna Dugas | dugasa@nsula.edu | 318-357-5519 |

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| **Nunez Community College (NCC)** | Andreas Pashos | apashos@nunez.edu | 504-278-6287 |
| **River Parishes Community College (RPCC)** | Esperanza Zenon | ezenon@rpcc.edu | 225-743-8713 |
| **SciPort Louisiana's Science Center** | vacant | vacant | vacant |
| **Southeastern Louisiana University (SELU)** | Gerard Blanchard | gerard.blanchard@selu.edu | 985-549-2159 |
| **Southern University and A & M College (SUBR)** | Michael Stubblefield | michael_stubblefield@subr.edu | 225-771-5231 |
| **Southern University of New Orleans (SUNO)** | Illya Tietzel | itietzel@suno.edu | 504-286-5111 |
| **Tulane University (Tulane)** | Mark J. Fink | fink@tulane.edu | 504-862-3568 |
| **University of Louisiana at Lafayette (ULL)** | Afef Fekih | afef.fekih@louisiana.edu | 337-482-5333 |
| **University of Louisiana at Monroe (ULM)** | Ken Leppert | leppert@ulm.edu | 318-342-1918 |
| **University of New Orleans (UNO)** | Matthew Tarr | mtarr@uno.edu | 504-280-1038 |
| **Xavier University of Louisiana (Xavier)** | Ashwith K. Chilvery | achilver@xula.edu | 504-520-5149 |

# LaSPACE Requirements and Restrictions

In this section, requirements and restrictions applied to all LaSPACE programs are summarized. Additional requirements and restrictions pertaining to individual programs offered by LaSPACE are detailed later in these guidelines.

## Public Nature of Applications to LaSPACE

Once an application is received in the LaSPACE office, it becomes public record. Although the staff will not disseminate applications to individuals other than to reviewers, applicants should be aware that, if a request for information is made by the public (e.g., the news media), a copy of the application, by law, must be provided.

## Disclosure of Information

All LaSPACE programs must conform to applicable Federal, State and NASA regulations and stipulations. This includes annual reporting of award participant information to both the Louisiana Board of Regents and NASA. Part of this information will include both directory information such as name, address, telephone number, date of birth, and demographic information such as gender, ethnicity, and race for all award participants including faculty, staff, and students. Further, LaSPACE outreach includes public dissemination of its supported programs through *The Spaceporter Newsletter*, the LaSPACE website (https://laspace.lsu.edu/), as well as papers and/or presentations at Space Grant or related Education & Public Outreach conferences. The contents of award reports, including participant names, titles, institution, project summaries, results or conclusions and images, might be included in such public outreach articles. It is not intended that these public articles will disclose directory or demographic information except as aggregated statistical data. **The reporting format provided by the LaSPACE office must be used for all progress and final reporting on LaSPACE awards.** Additional reporting, such as disclosure of inventions resulting from LaSPACE funded projects, must be submitted using NASA forms. The NASA Form 1679 (NF1679) - Disclosure of Invention and New Technology (Including Software) must be

completed by the Subawardee's institution for submittal to LaSPACE and NASA. A Microsoft Word version of NF1679 can be accessed here: https://invention.nasa.gov/assets/downloads/nf1679.doc

## Diversity

It is a national priority to increase diversity in Science, Technology, Engineering, and Mathematics (STEM), from university students, faculty, and staff to industry employees. Traditionally, minority groups and women have been under-represented in the STEM disciplines as students and faculty as well as in the workplace after graduation. LaSPACE is committed to addressing this priority and utilizing its programs, to the degree possible, to increase the diversity among its awardees. LaSPACE also aims to support a diverse set of institutions and disciplines. **All proposers are expected to help recruit diverse participants to their proposed projects.** To ensure that PIs are making a reasonable effort to recruit diverse participants, a diversity recruitment plan must be included in all proposals submitted to LaSPACE.

## Animal Use

Any project proposing the use of an animal model for validation must include a local IACUC approval letter, fully signed, which specifies a validity period longer than the proposed project period. Failure to obtain the Institutional Animal Care and Use Committee's approval in advance, is grounds for returning the proposal unreviewed. Attach the IACUC material as an additional appendix.

## Human Subjects

Projects that involve human subjects are not acceptable for this program.

## Eligibility

PI must be associated with a LaSPACE affiliated institution. PI must be a research or tenure-track faculty member or designated institutional representative recognized by LaSPACE. Note that there is only one Principal Investigator (PI) for a given REA project. All other senior researchers involved with the project can be listed as Key Personnel. Additional, or altered, restrictions may apply to specific programs.

## Budgeting

Proposals submitted to this solicitation should keep their budgets within $30-$35k.

While equipment and foreign travel are technically allowed under Louisiana Board of Regents rules, such items must be well justified and might cause the proposal to not review well. Currently BoR funds are exclusively used to fund Space Grant REA projects. When available, NASA funding may be considered to fund additional, qualified proposals.

LaSPACE permits indirect (F&A) costs at the BOR rate (currently calculated as 25% of Salaries, Wages, and Fringe) on all REA proposals (Unrecovered F&A is an allowed form of cost sharing). The LaSPACE program management team may choose to use available NASA funds to support an REA project, and in such instances the proposing institution agrees to retain the BOR indirect rate charges, as originally proposed. All proposed F&A charges applied (LaSPACE requested funds & Cost-share funds including unrecovered indirect) must be calculated in detail in the budget narrative section.

Further, LaSPACE is a federal-state partnership -- a 'seed' program -- that requires local matching funds to be generated. A significant cost sharing by the submitting institutions is required (approximately 1:1). Cost sharing indicates an institution's commitment to the proposed project and is one of the criteria used by the reviewers in their evaluation.

Applications solely for the acquisition of equipment, or solely to support a graduate student, will not be funded. However, some support for graduate and undergraduate students is anticipated within an application. Student tuition is ***not*** an allowable expense.

Funds are intended to be used to support research related activities of the participants. Research-related travel funds may be included in the budget, including conference registration fees to present results of LaSPACE funded research and/or for students to participate in a student paper/poster session (Louisiana State travel regulations apply to all travel).

Purchase of general office computers/software is not allowed unless it is specifically designated for the research, such as a dedicated laptop used on a research vessel, or the like. Other research-related expenditures will be considered on a case-by-case basis.

**Any requests to rebudget funds must be submitted in writing to laspace@lsu.edu for consideration.** A detailed justification for the rebudget must be included and minimum requirements for direct student funding commitments must be met.

# Disbursement of Funds

LaSPACE Award fund distribution will be managed by the applicant's college or university, either via a cost-reimbursable subcontract if the applicant is at an affiliate other than LSU, or by transfer of funds from LaSPACE to the applicant's department for projects at LSU. The institution/department will assume responsibility for administering, distributing, and documenting costs charged to this program.

# Period of Performance

Unless otherwise stated, LaSPACE programs have a default period of performance of 12 months. Shorter periods of performance may be proposed, or even required by the LaSPACE office, to meet any requirements or restrictions related to the parent grant. *A proposed period of performance is provided for each program cycle on the summary page; proposers may request a different period with a start date up to 60 days after our proposed start date, unless otherwise indicated.*

# No-Cost Extension Policy

No cost extensions (NCEs) for ongoing projects may be submitted to the LaSPACE program office no later than 60 days before the initial project end-date. All NCE requests must include a status report which addresses all accomplishments made to-date on the project (including all publications, proposals, presentations, patents, etc), where the project is in relation to the originally proposed end date, reasons why the project has been delayed, and a proposed plan for completing the project. This status report must also identify all participants on the project (students, post-docs, faculty, and staff).

# Number and Duration of Awards

LaSPACE expects to issue 5 to 8 REA subawards annually.

# Assessment by External Reviewers

All applications that meet the eligibility requirements and guidelines established for this program will be reviewed by out-of-state consultants for merit. A strong proposal will clearly address each of the following:

1. Scientific and Technical merit of the proposed project.

2. Relevance of the project to aerospace goals and alignment with NASA and one of its Mission Directorates or Centers.
3. Competency of the project personnel with emphasis on the potential degree of enhancement and of the probability for the project to lead to increased competitiveness and subsequently funded work.
4. Degree to which new research directions and capabilities are to be developed.
5. Contribution of the project to increasing diversity, particularly under-represented groups, women, and persons with disabilities.
6. Degree to which the project will contribute to workforce development and human capital needs, both locally and nationally.

After receiving the recommendations of the out of state reviewers, LaSPACE will prepare a report on the evaluations for the Board of Regents (BoR). Once approved by the BoR, award letters will be issued, and subcontracts will be drafted by the LSU Office of Sponsored Programs (OSP).

# Evaluation Criteria

Each proposal submitted under the Research Enhancement Awards Program will be evaluated by out-of-state reviewers from Space/Aerospace fields, but not generally by an expert in any particular subject area. Sufficient information must be clearly stated by the proposer to allow the reviewer to make an informed judgment. Failure to supply the appropriate information will lead to lower scores and non-funding of the project. Proposals will be evaluated using the following criteria which are reflective of LaSPACE Goals and Objectives and the NASA Mission.

1. The degree to which this proposal is relevant to Aerospace goals and to NASA's Mission (15%).
2. Scientific and technical merit of the proposed project (25%).
3. Competency of the proposer(s) to carry out the research plan and achieve the stated goals (10%).
4. Probability for the project to develop new capabilities and its potential for increased involvement in Space or Aerospace R & D for the investigator(s) (10%).
5. Adequacy of the project goals and objectives and the cited project outcomes (5%).
6. Appropriateness of the budget to carry out the project, including institutional contributions or other matching funds (10%).
7. Degree of student involvement in the Research Plan (10%).
8. Degree to which the project contributes to workforce and/or economic development (5%).
9. Contribution of the proposed project to increased diversity (10%).

# Research Enhancement Award (REA)

## Application Guidelines

## About the REA Program

The LaSPACE Research Enhancement Awards (REA) Program is intended to provide support for faculty (and students) at LaSPACE member institutions, particularly aimed at the emerging researcher or an established researcher who wishes to pursue new research directions, for the development of projects, contacts, and collaborations that will bring Louisiana scientists into the mainstream of NASA related research activity, thereby increasing their chances to successfully compete in the aerospace R&D marketplace. As is true with all LaSPACE Programs, minority participation is strongly encouraged. The REA Program is funded by state matching funds, through the Board of Regents Support Fund. The awards are intended to develop expertise and to contribute to research competitiveness. However, awards are not intended purely to support faculty salaries or graduate student stipends. It is anticipated (and strongly advised) that students (both graduate and undergraduate) will be involved in REA projects, but the overriding goal is the development of research capabilities and infrastructure in support of the country's space/aerospace endeavors. In that regard, contacts / collaborations / ties to NASA centers and NASA researchers are strongly encouraged.

The overall goal for this Program is to effectively utilize the resources available through LaSPACE as incentive for faculty and students: 1) to develop research competitiveness, 2) to develop new research projects or directions, and 3) to foster collaborations among NASA researchers, other federal laboratories, and with the business/industry community.

### Subprogram Descriptions

The REA Program is separated into two component parts or subprograms, The Research Facilitation/Initiation Subprogram and the Visiting Researcher Subprogram.

**THE RESEARCH FACILITATION/ INITIATION AWARDS SUBPROGRAM** is intended to support LaSPACE Goals with the objective to build research infrastructure.

1. To increase, in quantity and in quality, Louisiana's production of aerospace and related science and engineering graduates and professionals,
2. To enhance in scope, depth, and number, research and development activities in aerospace and related sciences and engineering, and
3. To indirectly increase aerospace and related industries in the state -- not only for economic development but also for economic diversification.

### NOI Program Requirement for REAs

An NOI is required for LaSPACE REA proposals. Only proposers who have successfully submitted an NOI are eligible to submit an REA proposal. NOIs do not need to be routed through for institutional approvals/signature the way the final proposal needs to be. NOIs are required so that our office has more time to line up appropriate reviewers in advance of the proposal submittal date. The NOI deadline is provided on the program summary

page and the form and instructions for submitting an NOI are included with all the other forms at the end of these guidelines.

## Proposal Format Requirements

All proposals submitted to LaSPACE must follow the format listed below. Proposals not constructed as follows may be rejected without review. Any forms mentioned below are included in the attachments following these guidelines.

- Cover Page Form
- Prior LaSPACE Awards Form
- Table of Contents
- Proposed Project Summary Form
  *The project summary (abstract) must be 250 words or less. It should concisely describe the proposed project, giving the objectives, key features, and proposed outcomes, and provide a timetable for project implementation. How the proposed research supports the goals and objectives of at least one NASA Mission Directorate must be explicitly stated and named, as well as any relevant NASA Centers. Summaries are to be written in general terms, understandable by a non-expert in the field.*

A. Project Narrative
   *The project narrative should be about ten (10) single-spaced pages (12 point font). Typical subsections of the narrative should include, in the order listed, the following:*

   1) **Introduction:** Indicate REA program and state the technical or scientific problem to be addressed.
   2) **Objectives of the Project:** Scientific, technical objectives, workforce development, diversity objectives, and research capability development should be concisely delineated.
   3) **Implementation Strategy or Scientific Method and Timetable:** The scientific and technological methodology to be employed in the work should be succinctly described. Strategies germane to the successful implementation of the project should be discussed. A concise timetable, preferably in a tabular form, should be provided. Key milestones toward the successful completion and possible continuation and expansion of the project should be shown in this table along with measurable outcomes from the project.
   4) **Relevance to NASA Mission:** While direct collaboration with a NASA Center is not a requirement of the REA Program, it is desirable if possible. Previous or potential collaborations with NASA should be mentioned; explicit alignment with research goals established within at least one Mission Directorate must be stated.
   5) **Long Term Benefits:** Describe the expected long-range benefits from the project to Space and Aerospace R & D and infrastructure at the institution, as well as to the project personnel. Describe your plan for dissemination of the results. Discuss plans and prospects for submitting a follow-up proposal to NASA, other federal agencies, BORSF, or non-public sources. Describe patent potential, if applicable.
   6) **Key Personnel/Management:** Identify the key personnel and succinctly describe their qualifications and experiences as they relate to the successful execution, continuation, and expansion of the project. Discuss how the project contributes to creating a diverse workforce and meeting the human capital needs of government, industry, and academia.

7) **Student Participants:** NASA is committed to the development of a strong aerospace workforce. Thus, proposers are expected to make every effort to include students from traditionally underrepresented groups in STEM. **Specific plans for diversity recruitment must be detailed in this section.** NASA requires detailed longitudinal information on all participants, especially on students. Thus, all students must complete the online LaSPACE Student Participation Form with required demographic, contact, and future career information (links provided on Student Participant List attachment).

B. NASA Media Release Form**:** To be completed by the PI and all identified student participants. If other project collaborators appear in photos, please have them also complete a NASA Media Release Form.

C. Budget, Budget Narrative, and Current/Pending Support
*Please provide the project budget on the Budget Form provided. Note that F&A for the LaSPACE Funds Requested is calculated at the BOR rate of 25% of salaries, wages, and fringe benefits only. Unrecovered F&A may be included as part of your Institutional Match Funds. Tuition is not an allowable cost. You will be required to document the institutional contributions on your cost-share forms submitted with billings. The Budget Narrative should be provided on a separate page; they should be succinct, but provide sufficient information for a reviewer to judge the need for and importance of the items requested. Budget explanations must also include a formula explaining how F&A is calculated in both the requested and cost-shared budget columns, including how any institutional contribution of unrecovered F&A was calculated. Following the budget explanations, provide current and pending support information for the Principal Investigator.*

D. Vita/Resume
*Attach a two-page Vitae for the Principal Investigator. There can only be one Principal Investigator per project proposal.*

E. Letter of Support (if applicable)
*If the proposal involves work with a NASA center or other Federal laboratory or with a business-industry partner, attach a letter of support from the contact at the collaborating/participating institution (an e-mail is acceptable). A strong letter of support, describing the specific contributions in personnel or facility/laboratory use, will reflect well. Letters of support for the research goals without an explicit commitment of collaboration are also appropriate for this program.*

## Notes for Success

- Remember, the reviewers will not be expert in all sub-fields. They will be generalists, usually faculty members at other universities. Avoid highly technical jargon as much as possible and write at a level for the average scientist/engineer in a clear and concise fashion, i.e. what has been called the "Scientific American Level." Keep in mind also that the proposal is your opportunity to present yourself in the most positive light and to emphasize your best points and accomplishments (and/or research career plans) in your research efforts. Any prior or planned contacts with NASA or aerospace-related institutions should be mentioned. Follow the format instructions and respond clearly to the requested information. Diversity and involving undergraduates or graduate students in the research, along with opportunities for student papers/posters or as co-authors is expected. Review the Proposal Evaluation Criteria for additional hints for discussion points for a successful proposal.
- Do NOT include anything that is not explicitly listed above. If you believe additional content/sections are needed, contact our office at laspace@lsu.edu to request permission.
- Do NOT include the guidelines in your proposal submission.

# Attachments
# Required Proposal Forms

## Required Forms

All proposals submitted to LaSPACE must use the forms included following this page. Proposals not using these forms may be rejected without review.

- Notice of Intent – Submit this prior to submitting your proposal
- Cover Sheet
- Proposed Project Summary
- Prior LaSPACE Awards
- Proposal Budget Form
- Student Participant List (online form completion certification)
- NASA Media Release Form (completed by PI and all identified participants)

# LaSPACE REA Program Notice of Intent (NOI) to Propose

*This NOI must be submitted by the PI to LaSPACE on, or before, Friday, May 20, 2022 via email to laspace@lsu.edu.*

| NAME OF PRINCIPAL INVESTIGATOR (PI): | NAME INSTITUTION: |
|---|---|
| PI DEPARTMENT | PI PHONE NUMBER and EMAIL ADDRESS |
| TITLE OF PROPOSED PROJECT: | |
| LIST PROJECT DISCIPLINES: | |
| THE PROPOSED WORK WILL SUPPORT THE RESEARCH PRIORITIES OF THE FOLLOWING NASA DIRECTORATES AND NASA FIELD CENTERS (Check all that apply to your project. Narrative proof for selected alignment(s) must be included in your proposal narrative.):<br><br>Mission Directorate (Required): ☐SMD ☐STMD ☐ARMD ☐ESDMD ☐SMOD<br><br>NASA Center (If Applicable): | |
| PROJECT ABSTRACT (maximum 250 words): | |

# LaSPACE REA Program Proposal Cover Sheet

1. Title of Proposed Project: _____

_____

2. Principal Investigator: _____
(Name) (Highest Degree Earned) (Citizenship)

_____
(Department)

3. Institution of Higher Education: _____

4. Address: _____
(Street Address/P.O. Box Number)

_____
(City, State) (Zip Code)

5. Telephone: _____ FAX: _____

E-mail: _____

6. Date of Submission: _____

7. Total Funds Requested: $ _____ Institutional Match: $ _____

**********

**Certification of Compliance with Applicable Executive Orders and U.S. Code:** By signing and submitting this proposal, the signatories certify that the statements made in this proposal are true and complete to the best of their knowledge; they agree to comply with LaSPACE award terms and conditions if an award is made as a result of this proposal; and the institution and proposed project are in compliance with all applicable Federal and State laws and regulations including, but not limited to, Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participant's responsibilities; Non-Discrimination; Certification against Lobbying imposed by section 1352, title 31, U.S. Code; Compliance with China Funding Restriction as detailed in Public Laws 112-10 Section 1340(a) and 112-55, Section 539; ACORN Compliance in accordance with 534 of the Consolidated and Further Continuing Appropriations Act of 2012 (Pub. L.112-55); and does not have a federal tax liability or federal felony conviction (sections 544 and 543 of Public Law 112-55).

8. Signature of Principal Investigator: _____

9. Name of Authorized Institutional Rep: _____

10. Signature of Authorized Institutional Rep: _____

11. Date Signed: _____

# Proposed Project Summary

| |
|---|
| NAME OF INSTITUTION (INCLUDE BRANCH/CAMPUS AND SCHOOL OR DIVISION) |
| ADDRESS (INCLUDE DEPARTMENT, BUILDING & ROOM #, CITY, STATE, ZIP) |
| PRINCIPAL INVESTIGATOR NAME, TITLE, & EMAIL |
| PROJECT TITLE |
| THE PROPOSED WORK WILL SUPPORT THE RESEARCH PRIORITIES OF THE FOLLOWING NASA DIRECTORATES AND NASA FIELD CENTERS (Check all that apply to your project. Narrative proof for selected alignment(s) must be included in your proposal narrative.):<br><br>Mission Directorate (Required): ☐SMD ☐STMD ☐ARMD ☐ESDMD ☐SMOD<br><br>NASA Center (If Applicable): |
| PERIOD OF PERFORMANCE<br><br>09/01/2022 – 08/31/2023 |
| ABSTRACT (DO NOT EXCEED 250 WORDS) |

# Prior LaSPACE Awards

(Limit this list to the last 5 years)

For each prior LaSPACE award, as a PI or a Co-I please provide the following:

1. Project Title:

2. Dates:

3. Was a final technical report submitted? _____YES _____NO*

   If no, explain:

4. Did a proposal to a funding agency result? _____NO _____YES

   If yes, Agency:

   Title:

   Date:

   Status: _____Funded _____Declined _____Pending

(Add additional pages as necessary.)

# LaSPACE REA Proposed Budget Form

*Include this form in your proposal. Be sure to only ascribe funds to categories explicitly open to the program area to which you are applying. Following this form, include a detailed narrative explanation of all proposed costs.*

Proposal Title: _____

Principal Investigator: _____

Institution: _____

| | | LaSPACE Funds Requested | Institutional Match Funds* |
|---|---|---|---|
| A. Direct Labor | | | |
| | 1. Researchers | $ | $ |
| | 2. Graduate Student(s) | $ | $ |
| | 3. Undergraduate Student(s) | $ | $ |
| | 4. Fringe Benefits | $ | $ |
| | 5. Subtotal A | $ | $ |
| | | | |
| B. Supportive Expenses | | | |
| | 1. Travel | $ | $ |
| | 2. Supplies & Materials | $ | $ |
| | 3. Communications & Equipment | $ | $ |
| | 4. Other Direct Costs (Identify) | $ | $ |
| | 5. Subcontracts | $ | $ |
| | 6. Subtotal B | $ | $ |
| | 7. F&A (Indirect) | $ | $ |
| | | | |
| C. Total Project Cost | | | |
| | | **$** | **$** |

**Must be certified on all financial billings/reports.*

# Student Participant List

Student Participant List must be completed, and online demo forms filled out in advance of submitting this application. If students are to be selected after award, you must commit to completing these forms **as soon as students are recruited** to the project.

| Name | Classification | Major | Project Role |
|---|---|---|---|
| *e.g. Jane Smith* | *Undergraduate, Junior* | *Electrical Engineering* | *Electrical Design Lead; Technical Writing Co-Lead* |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Link to Undergraduate Student Participation Form
Link to Graduate Student Participation Form

☐ Check this box to confirm that all students listed above have completed an online participant form.

☐ Check this box to commit that all recruited students will complete the online form as soon as they are recruited.

Online Student Participant Form Guidance (applicable to all submissions):

Please provide the following guidance to students completing the online participant form.

- The online form should be completed and submitted by all student participants.
- Upon completion of the form, students will see an option to "print or get PDF of answers." It is recommended that students save a copy of their answers to their local device for their own records.
- The **Faculty Advisor/ Mentor (question 12)** should be the PI who is submitting this proposal. Please provide the students with your office phone number and email address to input.
- The **Program (question 15)** should be the program for which students are currently applying/participating in. If working under multiple LaSPACE projects, students will submit a demographic form for each separate project.
- The **Project Start Date (question 16)** should be 9/1/2022 for students under this current proposal submission.
- The **Participating Semester(s)** should be the "Fall 2022, Spring 2023, Summer 2023" option.

I, Click or tap here to enter text., hereby give permission to be interviewed, photographed, and/or videotaped.

I understand and agree that the text, photographs, and/or videotapes thereof containing my name, likeness, and voice, including transcripts thereof, may be used in the production of instructional, promotional materials, and for other purposes that NASA deems appropriate; and such materials may be distributed to the public and displayed publicly one or more times and in different formats, including but not limited to, websites, cablecasting, broadcasting, and other forms of transmission to the public.

I also understand that this permission to use the text, photographs, videotapes, and name in such material is not limited in time and that I will not receive any compensation for granting this permission.

I understand that NASA has no obligation to use my name, likeness, or voice in the materials it produces, but if NASA so decides to use them, I acknowledge that it may edit such materials. I hereby waive the right to inspect or approve any such use in advance or following distribution or display.

I hereby unconditionally release NASA and its representatives from any and all claims and demands arising out of the activities authorized under the terms of this agreement.
By signing below, I represent that I am of legal age, have full legal capacity, and agree that I will not revoke or deny this agreement at any time.

I have read the foregoing and fully understand its contents.

Accepted by:

Signature: Click or tap here to enter text. Date: Click or tap here to enter text.

Address: Click or tap here to enter text.
Cell Phone: Click or tap here to enter text.
Email Address: Click or tap here to enter text.
Name and Location of Event: Media related to a NASA Space Grant / NASA EPSCoR 2022 Project

*Note: This release pertains to my likeness captured by LaSPACE / LA NASA EPSCoR program staff and/or funded participants, as well as media I submit to the LaSPACE Management office documenting experiences related to this Project. This release is valid for all documentation submitted or released for the duration of the project. This waiver gives LaSPACE/ LaNASA EPSCoR team, LSU, the LA BoR, & NASA permission to share my likeness.*