

# LaSPACE

## Senior Design Project Support (Senior Design) 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)  
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Louisiana State University, Baton Rouge, LA 70803  
225.578.8697 | <http://laspace.lsu.edu/> | [laspace@lsu.edu](mailto:laspace@lsu.edu)

*Revised, March 2022*

*All previous versions of this program's guidelines are null and void.*

# Senior Design Program Summary Page

## About the Senior Design Program

The Senior Design Project Support Program is meant to offer supplemental funding in support of high-level student-led research and design projects conducted under the auspices of a formal Senior Design or Capstone Course. Projects must show clear relevance to NASA's mission and ongoing research at one or more of the NASA centers and be clearly aligned with research under the umbrella of one or more of the four mission directorates. This funding source is meant to supplement the cost of materials and supplies and/or travel for competitions related to such formally established senior design projects/courses.

## Program Summary

- Proposals must be signed off on by the Faculty PI and the Designated Institutional Representative for Sponsored Programs at your institution.
- While a single PI may submit proposals to support multiple projects, our objective is to serve a diverse set of disciplines and campuses, so we may not be able to fund more than one project per PI. Please rank order multiple proposals so we can consider your funding request in order of your preference.
- Award funds can be requested up to \$4,000; no strict cost-match is required, but some institutional investment will impact our evaluation.
- Please include the Student Participant List if your student participants have already been identified. If the team members are not all selected at the time of proposing, please be sure to send a complete Student Participant List as soon as the students have all been identified. All identified students must submit an online LaSPACE Student Participation Form.
- 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](mailto:laspace@lsu.edu) by 11:59 pm on Friday, May 20, 2022.**
- Important Dates:
  - Proposal Release Date: Friday, March 11, 2022
  - **Proposal Due Date: Friday, May 20, 2022**
  - Anticipated Award Announcements: June
  - Award Period of Performance: 08/15/2022 - 08/14/2023

# LaSPACE General Guidelines

## Introduction to the 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 (*formerly Office of Education*)

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 Space Grant 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](mailto: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](mailto: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](mailto: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](mailto:greg.chavers@nasa.gov)

### Space Operations Mission Directorate (SOMD)

POC: Marc Timm Phone: (202) 358-0373, [marc.g.timm@nasa.gov](mailto:marc.g.timm@nasa.gov)

## NASA Center Liaisons

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

## 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](mailto: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](mailto:laspace@lsu.edu)). Please refer to [the LaSPACE FAQs](#) before contacting LaSPACE management and/or coordinators.

LaSPACE Program Office, [laspace@lsu.edu](mailto: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](mailto:tgguzik@lsu.edu) | Colleen H. Fava, Assistant Director, [colleenf@lsu.edu](mailto:colleenf@lsu.edu) |  
Meaghin Woolie, Program Manager, [mwooli2@lsu.edu](mailto:mwooli2@lsu.edu) | Doug Granger, Student Flight Program Manager,  
[dgrang2@lsu.edu](mailto:dgrang2@lsu.edu) | Aaron Ryan, Student Flight Program Instructor & Outreach Coordinator, [aryan21@lsu.edu](mailto: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

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

<b>Northshore Technical Community College (NTTC)</b>	Chuck Crabtree	<a href="mailto:charlescrabtree@northshorecollege.edu">charlescrabtree@northshorecollege.edu</a>	985-545-1231
<b>Northwestern State University of Louisiana (NSULA)</b>	Anna Dugas	<a href="mailto:dugasa@nsula.edu">dugasa@nsula.edu</a>	318-357-5519
<b>Nunez Community College (NCC)</b>	Andreas Pashos	<a href="mailto:apashos@nunez.edu">apashos@nunez.edu</a>	504-278-6287
<b>River Parishes Community College (RPCC)</b>	Esperanza Zenon	<a href="mailto:ezenon@rpcc.edu">ezenon@rpcc.edu</a>	225-743-8713
<b>SciPort Louisiana's Science Center</b>	vacant	<u>vacant</u>	vacant
<b>Southeastern Louisiana University (SELU)</b>	Gerard Blanchard	<a href="mailto:gerard.blanchard@selu.edu">gerard.blanchard@selu.edu</a>	985-549-2159
<b>Southern University and A &amp; M College (SUBR)</b>	Michael Stubblefield	<a href="mailto:michael_stubblefield@subr.edu">michael_stubblefield@subr.edu</a>	225-771-5231
<b>Southern University of New Orleans (SUNO)</b>	Illya Tietzel	<a href="mailto:itietzel@suno.edu">itietzel@suno.edu</a>	504-286-5111
<b>Tulane University (Tulane)</b>	Mark J. Fink	<a href="mailto:fink@tulane.edu">fink@tulane.edu</a>	504-862-3568
<b>University of Louisiana at Lafayette (ULL)</b>	Afef Fekih	<a href="mailto:afef.fekih@louisiana.edu">afef.fekih@louisiana.edu</a>	337-482-5333
<b>University of Louisiana at Monroe (ULM)</b>	Ken Leppert	<a href="mailto:leppert@ulm.edu">leppert@ulm.edu</a>	318-342-1918
<b>University of New Orleans (UNO)</b>	Matthew Tarr	<a href="mailto:mtarr@uno.edu">mtarr@uno.edu</a>	504-280-1038
<b>Xavier University of Louisiana (Xavier)</b>	Ashwith K. Chilvery	<a href="mailto:achilver@xula.edu">achilver@xula.edu</a>	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 newsletters, 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.

## 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. All NASA funded participants must be U.S. citizens. Additional, or altered, restrictions may apply to specific programs.

## Concurrent, Overlapping, and Consecutive Awards

PIs may hold more than one LaSPACE Award concurrently with some restrictions. First, no student may be funded simultaneously via multiple awards in the scholarship/fellowship programs (GSRA, Fellows, LURA, MRS, & HIS programs). Consecutive, non-overlapping awards in these program areas may be issued to exceptional students in the midst of extended research. Proposals for additional year(s) of funding may be submitted if 1) the previous period of performance has recently past or is 60 days or less from completion, 2) must explicitly reference the completion of proposed tasks from the current/previous award within the new proposal, 3) must include a final report, or preliminary final report if still in progress, in an appendix, and 4) must clearly state the objectives and goals for the new proposal differentiating said goals from the prior work.

## Budgeting

Capital Equipment purchases, Tuition, and Foreign Travel are, in general, not allowable costs. **Any requests to rebudget funds must be submitted in writing to [laspace@lsu.edu](mailto: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 no greater than 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 within 60 days after our proposed start date, unless otherwise indicated.* **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 be submitted to [laspace@lsu.edu](mailto:laspace@lsu.edu) and 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).

# Senior Design Project Support Program

## Application Guidelines

### About the Senior Design Program

The Senior Design Project Support Program is meant to offer supplemental funding in support of high-level student-led research and design projects conducted under the auspices of a formal Senior Design or Capstone Course, and typically involve participation from 2-5 students. Projects must show clear relevance to NASA's mission and ongoing research at one or more of the NASA centers/under the umbrella of one or more of the four mission directorates. This funding source is meant to supplement the cost of materials and supplies and/or travel for competitions related to such formally established senior design projects/courses.

### Background and Objectives

The State of Louisiana's prime goal is to develop a well-trained, technical workforce capable of moving the state forward in R & D, attracting high tech industries, and promoting economic development. This is precisely what NASA desires and what LaSPACE is working to achieve. The core focus of the LaSPACE program continues to be student involvement in genuine scientific research and engineering projects.

### PI Eligibility

Proposals to the Senior Design RFP may be submitted only by qualified faculty members at a LaSPACE affiliate academic institution. This person becomes the project's Principal Investigator (PI) and is responsible for administering the funds, monitoring the student teams as they develop their projects, and managing the team's reporting requirements to LaSPACE. PI's may submit more than one proposal to the Senior Design funding competition; however, they must rank order proposals and additional projects will only be considered if funding remains. Our mission is to support projects around the state and in multiple disciplines. Rank order provisioning helps us avoid concentrated funding in one space.

### Award Funds

Senior Design awards are capped at \$4,000. The proposal may include costs for materials, supplies, and support for constructing/testing student products, and may include travel costs if a competition is associated with the final deliverable. A strict cost-share is not required, but some institutional investment will be reviewed favorably. The Senior Design Project Support Program is meant to supplement the cost of developing and building a final product as part of a formal Senior Design or Capstone Course at the PI's institution. Wages of any kind are not an allowable cost on a project of this type.

### Final Deliverables

At the end of the project, two final reports are required: the Final Technical Report and the Final Financial Report (Last invoice marked "final"). These reports are due within 30 days of the subcontract expiration date. The Final Technical Report will be a multi-page write-up that is suitable for transmission to NASA and BOR. This report must follow the guidelines provided by the LaSPACE office and should describe the activities undertaken, the participants, and your assessment, as Principal Investigator(s), of the success of the venture, the impact that it had (or will have), any follow-on proposals in preparation/submitted and any further plans for a continuation of this or similar projects. Photographs of, and testimonials from, student participants should be incorporated.

An updated Student Participant List must be included and all students must complete the online demographic form. This report shall be submitted to LaSPACE office ([laspace@lsu.edu](mailto:laspace@lsu.edu)) via email.

## Senior Design Proposal Requirements & Format

Senior Design proposals should be submitted as fully searchable pdf documents via email to [laspace@lsu.edu](mailto:laspace@lsu.edu). Proposals must include the following completed sections in the order presented:

- LaSPACE Cover Page
- Proposed Project Summary Form
- Prior LaSPACE Awards Form (most recent 5 years)
  - A. Proposal Narrative (not to exceed 5 pages)
    1. Introduction: State the problem to be addressed & Explicitly cite the Senior Design Course Number(s) and general requirements for this course on your campus.
    2. Background research summary
    3. Implementation Methodology with Timetable (The methodology to be employed in the project should be succinctly described. A concise timetable, preferably in a tabular form, should be provided. Key steps or milestones toward the successful completion of the project should be shown in this table. Background information should be provided as needed).
    4. Explicit alignment with research goals or priorities for any of NASA's Mission Directorates or Centers.
    5. Project Team: List identified student team members (name, classification, major, project role) in the Student Participant List. If students are to be selected after award, submit this list as soon as students are recruited. Include the expected number of students to be recruited and the recruitment plan/schedule for your campus's Senior Design courses. 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.
    6. Anticipated outcomes for student learning and development, including professional development activities such as poster presentations, written reports, competitions, etc.
    7. Evaluation procedure/mechanism
  - B. Budget
    1. LaSPACE Budget Form
    2. Budget Justification: narrative explanation of all costs. Note: It is hoped that for a student team award of this type, your institution will be willing to forego some or all of the indirect charges. Waived indirect may (should) be used as institutional matching funds.
  - C. NASA Media Release Form (completed by PI and all identified student participants)
  - D. Principal Investigator Short CV (1-2 pages)

### **NOTE to Proposers:**

- 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](mailto:laspace@lsu.edu) to request permission.
- Do NOT include the guidelines in your proposal submission.

# Attachments

## Required Proposal Forms

### Required Forms for Proposal

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

- 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 student participants)

# LaSPACE Senior Design 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

NASA MISSION DIRECTORATE ALIGNMENT (Check all that apply to your project. Narrative proof for selected alignment(s) must be included in your proposal narrative.)

SMD    STMD    ARMD    ESDMD    SMOD

PROPOSED PROJECT START DATE

08/15/2022 – 08/14/2023

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 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*
<b>A. Direct Labor</b>		
1. Researchers	\$ n/a	\$
2. Graduate Student(s)	\$ n/a	\$
3. Undergraduate Student(s)	\$ n/a	\$
4. Fringe Benefits	\$ n/a	\$
5. Subtotal A	\$ n/a	\$
<b>B. Supportive Expenses</b>		
1. Travel	\$	\$
2. Supplies & Materials	\$	\$
3. Communications & Equipment	\$	\$
4. Other Direct Costs (Identify)	\$	\$
5. Subcontracts	\$	\$
6. Subtotal B	\$	\$
7. F&A (Indirect)	\$	\$
<b>C. Total Project Cost</b>		
	<b>\$</b>	<b>\$</b>

*\*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 and submitting a completed table once students have completed their online forms

Name	Classification	Major	Project Role
<i>e.g. Jane Smith</i>	<i>Undergraduate, Junior</i>	<i>Electrical Engineering</i>	<i>Electrical Design Lead; Technical Writing Co- Lead</i>

[Link to Undergraduate Student Participation Form](#)

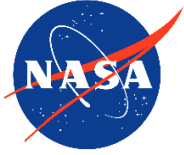
[Link to Graduate Student Participation Form](#)

- 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. For this proposal students will select Senior Design.
- The **Project Start Date (question 16)** should be 8/15/2022 for students under this current proposal submission.
- The **Participating Semester(s)** should be the “Fall 2022, Spring 2023, Summer 2023” option.



I, , 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:  Date:

Address:

Cell Phone:

Email Address:

Name and Location of Event: Media related to a NASA Space Grant / NASA EPSCoR 2021 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.*

