LASPACE 2024 STRATEGIC PLAN

About LaSPACE

The Louisiana Space Grant Consortium (LaSPACE), administered at Louisiana State University, is a statewide consortium established in 1991 under the National Space Grant College and Fellowship Program, which is a national network managed by the National Aeronautics and Space Administration (NASA) that includes all 50 states along with the District of Columbia and the Commonwealth of Puerto Rico. LaSPACE is comprised of higher education institutions, state education boards, and non-profit organizations with NASA-related interests. Current affiliates include three educational boards or systems, five community colleges, five Historically Black Colleges and Universities (HBCU), three research intensive universities, six research active universities, six four-year universities, two workforce development organizations, and nine informal education non-profit organizations. Together we work to develop, support, and promote NASA-aligned STEM research, education, and public literacy in Louisiana.

LaSPACE serves the state primarily through a portfolio of competitively awarded funding opportunities for students, faculty, and staff at higher education institutions in Louisiana to participate in research, development, and training projects in areas of priority to NASA and Louisiana. We also develop and deliver unique opportunities for direct participation in professional development and hands-on experiential projects. LaSPACE promotes scientific literacy in the state by participating in public STEM events and providing support to both formal and informal educators in Louisiana.

Much of the LaSPACE NASA funding and jurisdiction cost share is devoted to competitively awarded projects that address NASA needs across all Mission Directorates (Aeronautics, Exploration Systems, Science, Space Operations, and Space Technology). Louisiana has identified priority research areas including advanced manufacturing, materials, clean technology & energy, coastal & water management, life sciences, and bioengineering. These areas are consistent with NASA needs and LaSPACE anticipates supporting projects in these areas over the next four years.

The fundamental premise underlying our programming is involvement in research at all levels (undergraduate, graduate, and faculty) that aligns with NASA research priorities and mission goals, and then leveraging that infrastructure to increase NASA-relevant science literacy around the state. Building transdisciplinary teams that perform research and provide educational opportunities is the key to developing the 21st century workforce desired by both NASA and the State of Louisiana.

LaSPACE's strategic plan and programmatic priorities are driven by the State of Louisiana's research, education, and workforce development needs, while being responsive to National STEM goals, NASA's Strategic Plan, current NASA Mission Priorities (as detailed in the NASA EONS 2024 Omnibus Appendix 8), and NASA's Office of STEM Engagement (OSTEM) performance goals and objectives. The LaSPACE vision and mission complement and reflect the overarching vision and mission of the Agency while recognizing the unique capabilities and needs of Louisiana. The LaSPACE operational approach is grounded in our Core Values of Service, Partnership, Authenticity, Curiosity, and Engagement.

LaSPACE Vision

In alignment with NASA and directed by LaSPACE, Louisiana will play a significant role in building the Nation's next generation of scientists and explorers.

LaSPACE Mission

The LaSPACE Mission is to engage college students, academic institutions, science organizations, government agencies, and industry in Louisiana to create an inclusive, academic STEM ecosystem to build a diverse future STEM workforce.

LaSPACE Core Values

Service

LaSPACE operates from a philosophy of service, always mindful of our role in growing the STEM ecosystem of Louisiana via financial and intellectual investments in workforce and research development in the state. LaSPACE is committed to a culture of adaptability and continuous improvement. We create intentional feedback loops for participants in our programs to continuously revise and refine our processes, programs, and practice.

Partnership

Strong relationships with and among the various institutions, agencies, and organizations within the Louisiana STEM Ecosystem allows LaSPACE and our partners to leverage limited resources into authentic and impactful collaborative opportunities beyond our own silos. LaSPACE engages our local administrative partners, participates actively within the national space grant community, and is responsive to our Agency leadership.

Authenticity

LaSPACE prioritizes authenticity in our programs and practices. We create and support opportunities for authentic NASA-relevant projects and professional development activities for members of the LaSPACE community. LaSPACE projects and activities are expected to operate within a culture of inclusion, safety, and belonging where all participants are valued and respected.

Curiosity

Curiosity is foundational to discovery and growth. Like the STEM disciplines we support, the management and execution of LaSPACE programming benefits from a culture of curiosity which enables us to adapt to an everchanging environment, to broaden participation in our efforts, and to identify new and effective ways to serve our community.

Engagement

Inclusive Engagement is critical to LaSPACE as a statewide consortium within a national network. LaSPACE engages our community locally and nationally to create programs and practices that build the STEM ecosystem in Louisiana while supporting the priorities of NASA.

NASA Drivers

NASA OSTEM's 2024 solicitation "Space Grant Opportunities in NASA STEM FY2025-2028 / Cooperative Agreement Notice Number NNH24ZHA003C-SG25" states:

> The purpose of the Space Grant Program is to contribute to the 2022 NASA Strategic Plan, by "Strengthening STEM education through inspirational missions and collaboration with the academic community." Specifically, Strategic Objective 4.3 within the 2022 NASA Strategic Plan: Build the next generation of explorers, Engage students to build a diverse future STEM workforce.
>
> The OSTEM Performance Goals (PGs) are directly aligned with and support the 2022 NASA Strategic Plan and the OSTEM Learning Agenda. Additionally, the Space Grant Program also aligns with these performance goals. The following describes performance goals and associated objectives for the National Space Grant Program. These have been outlined below to assist Recipients in aligning OSTEM Performance Goals with the objectives for the National Space Grant Program:
>
> **Performance Goal 4.3.1:** Create unique opportunities for a diverse set of students to contribute to NASA's work in exploration and discovery.
>
> - **Objective 1.1:** Create opportunities that enable students to produce knowledge or products that will be used by NASA
> - **Objective 1.2:** Create opportunities that enable students to support NASA mission work and research
> - **Objective 1.3:** Establish and maintain a national network of universities that enable creating opportunities for students to contribute to NASA's work in exploration and discovery
>
> **Performance Goal 4.3.2:** Build a diverse future STEM workforce by engaging students in authentic learning experiences with NASA's people, content, and facilities.
>
> - **Objective 2.1:** Enhance students' STEM identity, skills, and knowledge by engaging them in NASA-based authentic STEM learning activities
> - **Objective 2.2:** Provide opportunities for students to engage with NASA's aeronautics, space, and science people, content, and facilities in support of a diverse future NASA and aerospace industry workforce
> - **Objective 2.3:** Broaden participation of students in Space Grant Programming that leverages authentic learning experiences with NASA's people, content, and facilities
>
> **Performance Goal 4.3.3:** Attract diverse groups of students to STEM through learning opportunities that spark interest and provide connections to NASA's mission and work.
>
> - **Objective 3.1:** Expand the reach of individual Consortia to collaborate regionally on efforts that directly support middle and high school student participation in hands-on, NASA-aligned STEM activities
> - **Objective 3.2:** Attract diverse populations of traditionally underserved and underrepresented middle and high school students to STEM and equip them with the tools necessary for success in college STEM degree programs leading to STEM careers
> - **Objective 3.3:** Promote a strong STEM education base for middle and high school students while training teachers in these grade levels to become more effective at improving student academic outcomes.

State of Louisiana Drivers

As a federal / state partnership the Space Grant program must address the priorities and needs of each jurisdiction. For the Louisiana Space Grant Consortium these jurisdictional needs are articulated in several state policy documents and reports developed by the Louisiana Board of Regents(LA BoR), the Louisiana Economic Development Agency (LED), and Louisiana State University, the state's flagship university and the lead institution for LaSPACE.

LaSPACE consults the LA BoR's Master Plan for Public Postsecondary Education in Louisiana and the 2023 Year Four Review of the Master Plan for overall strategic guidance. Established in 2010 and updated in 2024, Fostering Innovation through Research in Science and Technology in Louisiana (FIRST Louisiana 2030) is the statewide plan that will help chart directions for institutional planning and update the foundation for a comprehensive statewide approach to science and technology research, development, and innovation. Many of FIRST Louisiana's priorities and objectives mirror the STEM goals of the Agency and the Nation. Additionally, LaSPACE relies on enrollment data produced by the LA BoR Division of Institutional Research and Performance Assessment to set appropriate targets and metrics for the populations we serve.

The Louisiana Board of Regents, Louisiana Economic Development, and Louisiana State University share common goals to improve college enrollment and retention, retain STEM talent in the state, and grow local infrastructure to support innovative research and development.

LaSPACE Strategic Goals & Objectives

There is synergy between NASA and Louisiana STEM goals and objectives. Therefore, the LaSPACE Strategic Goals and Objectives flow directly from the objectives of the NASA Office of STEM Engagement, while maintaining a commitment to the research, educational, and economic development priorities of the state.

LaSPACE Strategic Goal #1 (LASG1): Maintain and evolve a cooperative, effective, and inclusive consortium of Louisiana institutions to broaden participation in NASA-related research, education, and economic development activities.

- **Objective 1.1 (LAO1.1):** Strengthen relationships with and participation of LaSPACE Affiliates.
  - Measures:
    - Improve affiliate representative vacancy rate to ≤10%
    - Make 2-3 annual affiliate visits to under participating campuses
    - Host at least 3 quarterly virtual meetings for the LaSPACE community
    - Hold virtual office hours for the LaSPACE community at least twice annually
    - Hold a two-day in-person annual meeting at a different affiliate campus each fall.
    - Add all new LaSPACE program participants to our listservs; regular scout affiliate campuses for new faculty and student organizations to add.
- **Objective 1.2 (LAO1.2):** Maintain and leverage national, state, and local partnerships and collaborative opportunities for the benefit of the LaSPACE community.
  - Measures:
    - Participate in National & Regional Space Grant Director's meetings; OSTEM Better Together Conferences; National and State EPSCoR meetings.
    - Maintain cooperative programming with the LA Board of Regents and the Louisiana Sea Grant Program (REA, LaSSO, GIRAF).

        - Review and Revise Funding Portfolio Procedures and Guidelines annually to be responsive to LaSPACE community needs, LSU/Louisiana policies, and NASA requirements.
        - Annually work with faculty and staff from ≥ 2 underrepresented campuses (HBCUs and Community Colleges) on funding or development opportunities external to LaSPACE programming.
- **Objective 1.3 (LAO1.3)**: Document and report successes and challenges.
    - Measures:
        - Collect reports for all LaSPACE funded projects; collect participant data from all LaSPACE funded activities.
        - Produce mid-year and annual narrative reports to NASA; complete and submit annual longitudinal reporting to NASA; complete annual reporting in the NASA STEM Gateway system.
        - Generate and maintain a Comprehensive Evaluation Plan via the services of an Independent Evaluator.

LaSPACE Strategic Goal #2 (LASG2): Support NASA-aligned research, training, and development activities for students, staff, and faculty at Louisiana Colleges and Universities.

- **Objective 2.1 (LAO2.1):** Provide competitive seed-funding opportunities for faculty at LaSPACE Colleges and Universities conducting research projects clearly aligned with at least one NASA Mission Directorate.
    - Measures:
        - Fund ≥ 5 Research Enhancement Award (REA) projects annually.
- **Objective 2.2 (LAO2.2):** Provide competitive funding opportunities for students at LaSPACE affiliate campuses to perform faculty-mentored research clearly aligned with at least one NASA Mission Directorate.
    - Measures:
        - Fund ≥ 4 Graduate Student Research Assistance (GSRA) projects annually.
        - Co-fund with LA Sea Grant ≥ 1 Graduate Interjurisdictional Research Award Fellowship (GIRAF) annually.
        - Fund ≥ 5 LaSPACE Undergraduate Research Assistantship (LURA) awards annually.
        - Co-fund with LA Sea Grant ≥ 2 Louisiana Space & Sea grant Opportunities (LaSSO) undergraduate research awards annually.
        - Fund ≥ 2 Summer Internships at NASA Centers or Louisiana Campuses (NASA & LOCII).
- **Objective 2.3 (LAO2.3):** Develop and fund NASA-aligned hands-on, mentored experiential programs for higher education students in Louisiana.
    - Measures:
        - Fund ≥ 5 mentored student teams at LaSPACE Campuses to participate in our scientific ballooning program, Louisiana Aerospace Catalyst Experiences for Students (LaACES) awards annually.
        - Coordinate and implement project design reviews, payload flight readiness testing, and an annual flight trip for all LaACES teams.
        - Fund ≥ 1 three-person team (1 Faculty + 2 Students) to participate in the annual NASA Wallops RockOn! Summer workshop.
        - Fund ≥ 5 mentored student teams at LaSPACE Campuses participating in official Senior Design projects aligned with a NASA MD.
        - Fund ≥ 1 Advanced Student Flight Project annually, such as RockSAT-C or HASP.

- **Objective 2.4 (LAO2.4):** Provide competitive funding opportunities to support NASA-aligned research, training, and development activities for students, staff, and faculty at MSI Colleges and Universities.
    - Measures:
        - Revise the current HBCU Scholars program into an institutional support program for all MSIs in Louisiana so that PBI Community Colleges in our state can access the funding. – Year 1 only
        - Fund ≥ 2 MSI Scholar programs annually.

LaSPACE Strategic Goal #3 (LASG3): Generate and curate professional development materials and opportunities to prepare higher education students in Louisiana to become productive members of the STEM workforce.

- **Objective 3.1 (LAO3.1):** Provide training and funding opportunities for students at LaSPACE Colleges and Universities to develop non-technical critical skills necessary for participating in the STEM workforce.
    - Measures:
        - Fund ≥ 15 students from LaSPACE campuses annually to participate in the Guided Pathways in STEM program.
        - Share additional opportunities from the STEM Ecosystem with students subscribed to our email listserv.
- **Objective 3.2 (LAO3.2):** Provide free and funded professional development opportunities for students to showcase their work.
    - Measures:
        - Invite ≥ 4 LaSPACE funded students to present their work at the annual meeting.
        - Host a session during each annual meeting with ≥ 20 student poster presentations.
        - Participate/facilitate ≥ 1 Local, Regional, or National Workshop, Conference, or PD Event annually.
        - Facilitate ≥ 1 virtual presentation(s) open to all LaSPACE students featuring a guest speaker from NASA or Space Science Industry.

LaSPACE Strategic Goal #4 (LASG4): Strengthen and broaden participation in the Louisiana STEM Ecosystem through engagement with partners from a variety of communities.

- **Objective 4.1 (LAO4.1):** Increase engagement in LaSPACE activities with underrepresented populations in STEM.
    - Measures:
        - Increase proposal submission rate from HBCU and Community College PIs by 20% over 4 years as compared to the previous multiyear funding cycle.
        - Provide informational talks about LaSPACE and other NASA opportunities to ≥2 LA campus student organizations which primarily serve underrepresented populations in STEM.
        - Exceed LA Higher Education STEM enrollment numbers for women (38.64%) and underrepresented minority population students (15.06%) in direct participant and direct funded participant percentages for LaSPACE programming.
- **Objective 4.2 (LAO4.2):** Contribute to public scientific literacy in Louisiana by participating in and/or supporting classroom, camp, and general public STEM activities around the state.
    - Measures:
        - LaSPACE MARS Truck Participation in ≥ 2 K-12 School or Camp-based STEM Events
        - LaSPACE MARS Truck Participation in ≥ 1 Public STEM Events
        - LaSPACE Personnel participate in ≥ 2 College/University STEM Events

        - Facilitate ≥ 1 informal STEM engagement activities through network connections and/or financial support.
        - Collaborate on a new activity or event with ≥ 1 Informal Education Affiliate of LaSPACE.
- **Objective 4.3 (LAO4.3):** Support professional development opportunities for K-12 STEM classroom teachers in Louisiana.
    - Measures:
        - Fund ≥ 3 Louisiana middle school STEM teachers to participate in the annual TX
        - Compile and disseminate NASA generated curriculum materials and supplies for K-12 STEM teachers and informal educators.
        - Investigate at least one new teacher development opportunity for Louisiana teachers annually.