



North Carolina Space Grant Strategic Plan 2020-2024

VISION

North Carolina Space Grant strives to inspire and engage North Carolinians to explore the universe and our own planet by capitalizing on NASA's unique contributions in exploration and discovery. Our program aims to support science, technology, engineering, and mathematics (STEM) research, education, and public understanding that support current and future success at NASA and across North Carolina.

MISSION

North Carolina Space Grant utilizes NASA-related STEM opportunities to engage and inspire North Carolinians and to build a diverse future STEM workforce. In order to achieve those aims, we create and support unique opportunities for students, faculty, educators, and the public to participate in space-related research, education, and outreach programs.

National Network, State Engagement

North Carolina Space Grant (NC Space Grant) was established in 1991 and is administered at NC State University. NC Space Grant is one of 52 programs across the nation federally authorized by Public Law 100-147, passed by Congress in 1987, and implemented by the National Aeronautics and Space Administration (NASA). This long-standing federal-state partnership between NASA and the state of North Carolina brings an impressive capacity to NASA and the nation through leveraging research, education, outreach, and products that have relevance and transferability at the state, regional, and national levels.

NC Space Grant is a state-wide network of North Carolina higher-education institutions, industries, government entities, educational programs, and nonprofit partners with NASA-related interests. These partners, and others across the state, work collaboratively to promote, develop, and support space-related STEM research, education, and public outreach across North Carolina.

NC Space Grant programmatic research, education, and outreach opportunities are regularly updated through multiple avenues. To confirm the direction of our current program and pursue new priorities, we seek input from the NC Space Grant Advisory Board, higher-education institutions within North Carolina, state and federal government leaders, subject matter experts, educational program leaders, industry partners, non-governmental entities, program alumni, and other key stakeholders in accordance with NASA priorities.

NC Space Grant is committed to executing the program based on core values including: supporting sound science through merit-based peer review; developing a pipeline of students trained across multiple disciplines; transferring information in an unbiased and transparent



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manner to a range of audiences; and collaborating with a range of partners and communities that represent diverse needs across North Carolina. NC Space Grant champions diversity, equity, and inclusion (DEI) by proactively recruiting and training a diverse student and faculty population, as well as engaging a diverse range of public audiences across the state. We engage and serve communities that are representative of the populations where our programs operate.

In support of meeting our mission and to continue to expand program engagement, opportunities, and impacts across North Carolina, NC Space Grant will concentrate efforts in the following strategic goals:

1. Support new knowledge generation to meet NASA-relevant interdisciplinary research and educational needs.
2. Prepare the next generation of STEM workers with the technical and professional skills to address current and future workforce needs.
3. Provide access to information and training in NASA-relevant subject matter to formal and informal educators, as well as to the general public, to inspire and educate.
4. Increase North Carolinians' awareness of, and opportunities for engagement with, NASA-related research, education, and outreach products and opportunities.

These strategic goals arose from a series of four facilitated strategic planning focus groups held with stakeholders across the state in 2018-2019, as well as in-depth discussions with the NC Space Grant Advisory Board and NC Space Grant team members.

These goals position the program to leverage current capacity; expand and develop new partnerships in support of program goals; and extend program investments to new challenges and opportunities in STEM research, education, and workforce development. As designed, these focus areas are synergistic, each building on and complementing the others where possible for programmatic efficiency and effectiveness.

NC Space Grant's integrated research, education, and outreach programs are designed to be cross-cutting. They will respond to NASA, industry, state, and national priorities, needs, challenges, and opportunities. They will also optimize and utilize NASA expertise, content, and facilities when possible and leverage partnerships to expand access to programming to the whole state.



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Strategic Goals and Objectives

Goal 1. Support new knowledge generation to meet NASA-relevant interdisciplinary research and educational needs.

NC Space Grant strengthens the space-related research infrastructure capabilities of North Carolina universities, colleges, and community colleges, as well as formal and informal STEM education programs. NC Space Grant provides resources and support to students (undergraduate, graduate, and community college), faculty, and educators across North Carolina to advance STEM research and scientific discovery through competitive, hands-on, experiential learning and research opportunities. NC Space Grant facilitates student, faculty, and educator collaborations with NASA Centers and facilities, relevant NASA Mission Directorates, industry partners, and other partnerships across North Carolina.

Objectives

Objective 1.1: Encourage students to pursue technical training and higher education along the STEM education pathway by exposing them to NASA's work in exploration and discovery.

Objective 1.2: Expose students, faculty, and educators to principles of research and the engineering design process through hands-on, experiential learning and cutting-edge research.

Objective 1.3: Foster a strong STEM education base and generate research results.

Objective 1.4: Facilitate opportunities to engage with NASA people, content, and facilities as well as those of the broader science, technology and innovation sectors in North Carolina and across the nation.

Strategies

- Offer competitive awards to higher education students, teams and clubs, and faculty in space-related research and experiential learning opportunities.
- Offer education and training to formal and informal educators in NASA Mission Directorate content.
- Strive for awards to be representative of state-wide demographics and needs as well as meet NASA and industry demand.
- Build local, regional, and state-wide education and research connections and networks.
- Conduct an annual state-wide NC Space Symposium to expose participants to space-related research and content.



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Goal 2. Prepare the next generation of STEM workers with the technical and professional skills to address current and future workforce needs.

NC Space Grant is committed to addressing workforce development needs in space-related STEM fields at NASA and across North Carolina. With strong, long-standing connections to NASA centers and facilities located throughout the nation – and through partnerships with space-related higher-education institutions, industries, government entities, educational programs, and nonprofit partners with NASA-related interests – NC Space Grant facilitates the pursuit of space-related careers for students across the state. We recognize that technical skills are only one part of building workforce excellence. NC Space Grant also strives to support the development of the professional and team skills necessary to ensure current and future workforce success.

Objectives

Objective 2.1: Strengthen STEM education and career pathways for students, faculty, and educators across North Carolina.

Objective 2.2: Provide opportunities for students, faculty, and educators to develop and strengthen necessary workforce and career skills, in addition to technical knowledge.

Objective 2.3: Increase awareness and understanding of current and future workforce trends and opportunities in NASA, industry, the state, and the nation.

Objective 2.4: Strengthen opportunities for student, faculty, and educator engagement with NASA and NASA-related industry partners in North Carolina and across the nation.

Strategies

- Develop opportunities to offer competitive NASA and industry internships.
- Deliver an annual North Carolina Space symposium inclusive of technical sessions, networking opportunities with industry professionals, a career panel, and a professional skills workshop that engages students.
- Foster formal and informal mentorships and networks.
- Engage an alumni network.
- Include industry representation on the advisory board and on award review panels, as appropriate.
- Seek authentic partnerships with industry to support mutually beneficial programs.

Goal 3. Provide access to information and training in NASA-relevant subject matter to formal and informal educators, as well as to the general public, to inspire and educate.



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NC Space Grant develops and promotes space-related STEM programs and expands the opportunity to participate in outreach and engagement programs to North Carolina learners of all ages. NC Space Grant also provides instructional tools, materials, and training for pre-service, in-service, and informal educators for activities in and out of the classroom related to NASA's mission. In these ways, NC Space Grant trains educators in STEM-related disciplines to utilize evidence-supported approaches, techniques, and tools, grounded in education research.

Objectives

Objective 3.1: Cultivate and maintain a state-wide network of pre-service, in-service, and informal educators.

Objective 3.2: Enhance and expand collaboration with educational and other STEM-based organizations at the local, regional, or state levels.

Objective 3.3: Inspire curiosity and challenge the minds of North Carolina learners of all ages.

Objective 3.4: Strengthen public understanding of NASA's mission and work.

Strategies

- Expose STEM educators across the state to NC Space Grant and NASA educational materials and other resources.
- Provide professional development opportunities to educators (pre-, in-service, and informal) utilizing NASA educational materials and resources.
- Establish a network of teacher ambassadors to disseminate NASA resources in local communities and serve as a local presence for education and outreach efforts.
- Support state-wide, regional and local educational efforts to the general public in partnership with STEM-based organizations (e.g., museums, planetariums, clubs, and associations).
- Provide targeted mini-grant opportunities to support programs for K-12 aged students.

Goal 4. Increase North Carolinians' awareness of, and opportunities for engagement with, NASA-related research, education, and outreach opportunities, events, and information.

NC Space Grant strives to improve the dissemination of information about funding opportunities, program and student successes, research results, and lessons learned. We work to cultivate and sustain targeted audience sectors, as well as seek out new audience sectors and communications channels to extend our reach and amplify opportunities, notably to underserved populations and communities across the state. NC Space Grant also seeks to spark interest in aeronautics, space science, space technology, and human exploration and operations through sharing relevant news



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and NASA information with audiences. We utilize our website, social media platforms (Facebook, Twitter, Instagram, LinkedIn), connections with the media, and cultivated relationships with constituents as tools to amplify our programs' and partners' successes.

Objectives

Objective 4.1: Raise awareness about NASA's mission and work.

Objective 4.2: Strengthen communications with current and new audiences.

Objective 4.3: Ensure that targeted audiences and key demographics, e.g., historically underserved populations, receive information about funding opportunities and events.

Objective 4.4: Improve access to, and dissemination of, resulting information and products from NC Space Grant programming.

Strategies

- Share success stories and lessons learned that highlight programs, project and team results, and events.
- Provide timely and relevant information about NC Space Grant funding, funding opportunities, events, and educational materials from NASA and other STEM organizations that are relevant to our audiences.
- Engage our audiences by enhancing our online and social media presence (e.g., Twitter, Instagram, Facebook, and LinkedIn).
- Cultivate and maintain relationships with traditional media to facilitate regional and state-wide outreach.

NC Space Grant Brings NASA STEM to North Carolinians

NC Space Grant is committed to supporting and expanding NASA's and North Carolina's STEM exposure and engagement. This is accomplished by carrying out competitive funding opportunities for research, education, and outreach programs, as well as a growing role as a state-wide facilitator of public education events to engage and inspire the general public. NC Space Grant works collaboratively with partners to provide greater opportunity for all North Carolinians to understand, engage with, and benefit from NASA-related programs. Ultimately, North Carolina benefits from enhanced STEM education, as well as broaden and strengthen academic and career pathways for students and educators across the state.