



**K-12 Professional Development Program
Grant Year 2012
(July 1, 2012 – June 30, 2013)**

Request for Proposals

Online Proposal Submissions Due: Friday, February 24, 2012 (5:00 PM, EST)
Original Hardcopy Submission Due: Thursday, March 1, 2012
Anticipated Award Announcement Date: April 15, 2012
<http://www.ncspacegrant.org/k12/>

**North Carolina Space Grant
K-12 Professional Development Program - Request for Proposals**

I. Summary

The goal of the NC Space Grant K-12 Professional Development Program is to provide funding to initiate and carry out professional development and training for pre-service, in-service, and/or informal educators. Funded programs will have the primary goal of better equipping North Carolina educators to inspire the future science, technology, engineering and mathematics (STEM) workforce to pursue education and careers in aerospace-related fields.

The K-12 Professional Development Program will consider proposals that utilize the STEM content of NASA's missions to:

- Develop, promote, or utilize new, innovative, and replicable approaches to improving STEM learning and instruction (middle grade projects are encouraged);
- Provide experiences and activities that are grounded in education research or utilize evidence-supported approaches, techniques, and tools; and
- Build linkages and connections to and from secondary education and higher education and informal education communities.

To best align proposed work to the needs of NASA Education and NC Space Grant, the following have been provided: NASA's Strategic Coordination Framework and focus areas (Appendix A) and the NC Space Grant Strategic Plan (Appendix B).

II. Background

The National Space Grant College and Fellowship Program was established by Congress under Title II of the National Aeronautics and Space Administration Authorization Act of 1988. Today the 52 Space Grant Consortia include over 925 affiliates from universities, colleges, industry, museums, science centers, and state and local government agencies.

NC Space Grant, established in 1991, is an active member of the National Space Grant College and Fellowship Program, and currently has 13 Affiliate member institutions (Appalachian State University, Duke University, East Carolina University, Elizabeth City State University, NC A&T State University, NC Central University, NC Community College System, NC State University, UNC-Asheville, UNC-Chapel Hill, UNC-Charlotte, UNC-Pembroke, Winston-Salem State University). Programs are conducted in areas of fellowships, scholarships, education, research, and public service to promote, develop and support aeronautics and space-related science, engineering and technology training and programs. A common focus is to involve women, underrepresented minorities and persons with disabilities, and to reach more citizens of North Carolina.

III. Project Overview and Guidelines

A. Award Range and Performance Period

NC Space Grant anticipates making up to 3 to 4 awards with the maximum individual award of up to \$15,000 for a one year period of performance (July 1, 2012–June 30, 2013). Proposing institutions are required to provide 100% cost-matching (1:1) using non-federal funds. In other words, if \$15,000 is requested from NC Space Grant, then \$15,000 must be provided as match. Facilities and Administrative (F&A, or overhead) costs are not allowed.

B. Eligibility

Competition is open to individuals at NC Space Grant Affiliate member institutions. Individuals must be qualified to serve as a principal investigator at their respective institution and be U.S.

citizens. Permanent residents, foreign nationals and resident aliens may apply for funding but with budget restrictions (see Section IV.E.).

U.S. public/private schools, school districts, museums, and other not-for-profit educational organizations may apply through partnership with the lead organization. NC Space Grant encourages proposals from females, members of underrepresented minority groups, and persons with disabilities. Submission is limited to one proposal per investigator.

IV. Proposal Content

A. Title Page (1 page)

The cover page must include the following items: Project title; period of performance (July 1, 2012-June 30, 2013); PI name, institution, address, phone, fax, and email; concurrence signatures from the Principal Investigator and the Authorizing Official of the proposing institution; and the program name (K-12 Professional Development Program).

B. Project Description (5 pages maximum)

Provide a detailed description of the proposed effort that addresses the following items:

- **Project Purpose:** Define the educational need of the proposed effort and clearly describe how NASA content and/or resources will be used to meet that need. Describe how the proposed effort will contribute to NASA’s educational priorities and identify the specific NASA education outcome(s) and objective(s) it supports. Furthermore, discuss how the proposed effort aligns with the goals and objectives of the NC Space Grant Strategic Plan.
- **Goals and Objectives:** Clearly state goals and objectives for the proposed effort and provide a rationale for the approach that will be used to achieve them.
- **Project Content:** Clearly describe documented evidence of customer need, how the proposed effort will address this need, and how the goals and objectives will be achieved. Describe innovative approaches, tools and techniques involved.
- **Anticipated Results:** Describe the outcomes of the proposed effort
- **Deliverables:** Provide a brief description of the products or other deliverables.
- **Sustainability:** Include a discussion of how project will be sustained beyond the funding period.
- **Dissemination:** Discuss plans for disseminating results to broader community.
- **Evaluation:** Describe the program evaluation plan including Specific, Measurable, Acceptable, Realistic, and Time-bound (SMART) outcomes-based objectives:

<i>Specific</i>	Provide enough detail about your project to help us know exactly what will be done;
<i>Measurable</i>	Goal should be such that when you are through you have some tangible evidence of completion (metrics) to indicate success;
<i>Acceptable</i>	Aligned with NASA and NC Space Grant Strategic Goals;
<i>Realistic</i>	Set appropriate targets based on your budget level;
<i>Time frame</i>	This is a 12 month grant and should be reflected in the description, analysis and results.

- **Participants:** Identify the number of project participants (students, faculty). Describe how the program will actively seek and recruit the involvement of women, underrepresented minorities, and persons with disabilities.
- **Prior Support:** Demonstrate PI’s effectiveness of prior work or successes in supporting STEM instruction and/or learning. If the PI is a recipient of a prior NC Space Grant award, describe the project(s) and impact(s).

C. Vita (2 pages)

The PI must include a biographical sketch (not to exceed two pages) that includes his/her professional experiences and positions and a bibliography of recent publications, especially those relevant to the proposed investigation. Those participants who will play critical management or technical roles in the proposed investigation should demonstrate that their qualifications, capabilities, and experience are appropriate to provide confidence that the proposed objectives will be achieved (no more than one page each).

D. Support Letters (2 letters)

Include letters of support and commitment from up to two partnering organizations, universities, schools, or school districts.

E. Budget and Budget Narrative (2 pages)

Provide a detailed budget in the format outlined in Appendix C, K-12 Professional Development Program – Proposed Budget for Grant Year 2012, along with a budget narrative. Each format should include expense summaries as well as the 100% (1:1) non-federal cost match requirement.

- Direct salary expenses should be separated by titles or disciplines with hours, rates, and total amounts for each position. Student salary expenses should also be noted.
- Permanent residents, foreign nationals and resident aliens may not charge salary or travel expenses to the grant; unrecovered salary and travel can be used to meet the cost-match requirement.
- Proposed travel should include the number of trips, destination, duration, etc. International travel is not allowed.
- Food expenses are not allowed.
- Equipment (including computers), furniture, building/remodeling costs, and general office supplies may not be charged to the grant but may be used to contribute to the organization's required matching funds.
- The NC State University/NASA National Space Grant College and Fellowship Program grant does not cover facilities and administrative costs. Unrecovered facilities and administrative costs may be used for required cost-matching. The detailed budget must include a description of the required 1:1 (100%) non-federal matching funds.

V. Proposal Format

The following guidelines and restrictions apply to all proposals. Proposals not meeting these requirements may not be considered.

- Proposals must be submitted in PDF format.
- Proposals should be one-sided, single-spaced on standard 8 ½ x 11 paper, no smaller than 12 point font and with no less than one inch margins throughout. Text restrictions are inclusive of all illustrations, tables, charts, exhibits, etc.
- All pages must be numbered sequentially.
- Proposals should contain only appendices and attachments specifically called for.
- All information you wish for reviewers to consider should be included in your proposal. It is not acceptable to refer reviewers to websites or other external sources for additional information or as evidence for your narrative. Appendices and attachments are not allowed.

VI. Proposal Submission

Proposal submission will be conducted via the NC Space Grant website at <http://www.ncspacegrant.org/proposals/> by February 24, 2012 at 5:00 PM. One complete single electronic file in PDF format is required by the on-line system. Electronically submitted proposal **must** contain all required signatures. Questions concerning the on-line proposal submission system should be directed to proposals@ncspacegrant.org.

The original proposal with all required signatures must arrive at NC Space Grant by March 1, 2012. Late or incomplete submissions may not be considered. ***Hard copy submissions should be sent via FedEx or UPS to:***

Dr. Chris Brown, Director
NC Space Grant
NCSU - Engineering Building III
911 Oval Drive, Room 3002
Raleigh, NC 27606

VII. Proposal Review and Evaluation

Proposals will be reviewed by a panel of individuals who are scientifically literate, but not necessarily experts in the proposed area. The following areas will be considered in the evaluation of the proposal:

Educational merit (25%)

- Degree to which proposed effort advances secondary education STEM instruction and learning;
- Degree to which proposed effort offers innovative methods, approaches, and concepts;
- Degree to which proposed effort builds on lessons learned and/or best practices of past education and/or research activities undertaken by the PI;
- Reasonableness and clarity of project goals and objectives; and
- Degree to which the proposed effort provides sustained opportunities for teachers and students to deepen their knowledge about NASA-supported areas of science, the nature of science, and engineering.

Relevance to NASA and NC Space Grant goals (25%)

- Degree to which proposed effort is aligned with one or more of the NASA Office of Education outcomes as well as NC Space Grant Strategic Goals for Education;
- Degree to which proposed effort cultivates diversity and extends access to NASA education materials;
- Degree to which proposed effort utilizes NASA's unique contributions to science, engineering, and exploration; and
- Likelihood that the proposed effort will be sustained beyond the initial funding period.

Management (20%)

- Qualifications, capabilities, and experiences of the principal investigator;
- Likelihood proposed activities will result in an efficient and productive effort;
- Realistic schedule / timeline or other description of how project goals, objectives and major milestones will be met; and
- Level of collaboration with other projects, institutions, professional societies, and/or other appropriate partners.

Evaluation (15%)

- Evaluation plan describes appropriate methods for determining the extent to which the project has achieved its goals and objectives;
- Evidence that appropriate evaluation processes are embedded throughout the life-cycle of the project.

Budget (15%)

- Clarity and reasonableness of the funding request;
- Degree of alignment between proposal narrative and budget;
- Degree to which proposed effort demonstrates effective use of funds; and
- Degree to which proposed outcomes justify total costs.

VIII. Reporting Requirements

A final report is required at the conclusion of the award that includes an evaluation of the program's effectiveness relative to the proposed objectives and the NC Space Grant strategic plan (format and due date will be provided). Recipients will be required to maintain and provide data necessary for NC Space Grant to report to the NASA Office of Education Performance Measurement System (OEPMS). This data typically includes but is not limited to: description of work performed; evaluation of the impact of work performed; number of students, teachers, staff, faculty, and general public involved; gender and ethnic breakdown of participants; list of papers published, presentations given, conferences hosted/attended.

A detailed budget summary will also be required that summarizes all project expenditures, and includes a comparison of the proposed budget to actual expenditures for all categories. A signed statement of cost sharing from the PI's Office of Sponsored Programs must accompany the budget summary.

IX. Other Requirements**A. Acknowledgment of Support**

An acknowledgment of NC Space Grant support (logo and/or written) must appear in all publications of any material based on this funding in the following terms: "Supported by the North Carolina Space Grant." The NC Space Grant logo can be downloaded at www.ncspacegrant.org/info/.

B. Audit and Records

Financial records, supporting documents, statistical records, and other material pertinent to this grant shall be retained by the grantee for a period of at least three years following submission of the final project report and shall be made available to NC Space Grant upon request.

C. Payments

Contingent upon NC Space Grant's receipt of NASA and State funds, a sub-agreement will be established between the grantee's institution and NC State University. Funds awarded may come from mixed sources (federal and state funds). The grantee institution shall receive payments under this grant through that institution's Office of Sponsored Projects. Invoices must be submitted no later than 30 days after the last day of the month in which the expense was incurred. Late invoices may not be honored.

D. Changes in Principal Investigator

If the principal investigator leaves the grantee institution or otherwise relinquishes active direction of the project, the institution must notify NC Space Grant as soon as possible and the award will be terminated. Awards may not be transferred if the PI leaves the grantee institution to another institution that is not an active academic member of the NC Space Grant.

E. Suspension or Termination

This grant may be suspended or terminated if the grantee fails to comply with all the terms and conditions of the grant.

F. Nondiscrimination

No person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination under this grant on grounds of race, color, national origin, religious affiliation, physical disability, gender, or sexual orientation.

X. Point of Contact

Questions regarding this announcement should be directed to:

Dr. Chris Brown, NC Space Grant Director, cbrown@ncsu.edu, (919) 513-2457; or

Ms. Jobi Cook, NC Space Grant Associate Director, jobi_cook@ncsu.edu, (919) 515-5933.

Applicants are encouraged to contact their local NC Space Grant Campus Director, listed below:

University	Campus Director	Email
Appalachian State University	Dr. Anthony Calamai	calamaia@appstate.edu
Duke University	Dr. Josiah Knight	jknight@duke.edu
East Carolina University	Dr. John Rummel	rummelj@ecu.edu
Elizabeth City State University	Dr. Thomas Rossbach	tjrossbach@mail.ecsu.edu
North Carolina A&T State University	Dr. John Kizito	jpkizito@ncat.edu
North Carolina Community College System	Mr. Matthew Meyer	meyerm@nccommunitycolleges.edu
North Carolina Central University	Dr. Shawn Sendlinger	ssendlinger@ncsu.edu
North Carolina State University	Dr. Fred DeJarnette	dejar@ncsu.edu
University of North Carolina at Asheville	Dr. Brian Dennison	dennison@unca.edu
University of North Carolina at Charlotte	Dr. Jim Conrad	jmconrad@uncc.edu
University of North Carolina at Chapel Hill	Dr. Gerald Cecil	cecil@physics.unc.edu
University of North Carolina at Pembroke	Dr. Jose D'Arruda	jose.darruda@uncp.edu
Winston-Salem State University	Dr. Elva Jones	jonese@wssu.edu

APPENDIX A: NASA Education Strategic Coordination Framework

Overview:

As identified in the 2011 NASA Strategic Plan, education is one of the Agency's cross-cutting management strategies. High achievement in STEM education is essential to the accomplishment of NASA's mission. NASA contributes to national efforts for achieving excellence in STEM education through a comprehensive education portfolio implemented by the Office of Education, the Mission Directorates, and the NASA Centers. NASA will continue the Agency's tradition of investing in the Nation's education programs and supporting the country's educators who play a key role in preparing, inspiring, exciting, encouraging, and nurturing the young minds of today that will manage and lead the Nation's laboratories and research centers of tomorrow. http://www.nasa.gov/pdf/516579main_NASA2011StrategicPlan.pdf

The ***NASA Education Strategic Coordination Framework: A Portfolio Approach*** describes the alignment of NASA's education portfolio with the 2011 NASA Strategic Plan and creates an agency-wide strategic planning, implementation and evaluation framework for NASA's investments in education. This Framework establishes three educational outcomes:

- Outcome 1 – Higher Education: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goal through a portfolio of investments.
- Outcome 2 – Elementary and Secondary Education: Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers, and faculty.
- Outcome 3 – Informal Education: Build strategic partnerships and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA's mission.

The plan encompasses all education efforts undertaken by NASA and guides the Agency's relationships with external education partners. <http://education.nasa.gov/about/strategy>

NASA Education Areas of Emphasis:

- Authentic, hands-on student experiences in science and engineering disciplines-the incorporation of active participation by students in hands-on learning or practice with experiences rooted in NASA-related, STEM-focused questions and issues; the incorporation of real-life problem solving and needs as context for activities.
- Engage middle school teachers in hands-on curriculum enhancement capabilities through exposure to NASA scientific and technical expertise. Capabilities for teachers to provide authentic, hands-on middle school student experiences in science and engineering disciplines.
- Community Colleges- develop new relationships as well as sustain and strengthen existing institutional relationships with community colleges.
- Diversity of institutions, faculty, and student participation.

APPENDIX B: NC Space Grant Strategic Plan, FY2010 - 2015

The NC Space Grant 2010 – 2015 Strategic Plan is available online:

http://www.ncspacegrant.org/info/docs/strategic_plan/NCSG_Strategic_Plan_2010-2014.pdf

**APPENDIX C:
K-12 PROFESSIONAL DEVELOPMENT PROGRAM
PROPOSED BUDGET FOR GRANT YEAR 2011
(July 1, 2012 – June 30, 2013)**

Institution: _____

PI: _____

Budget Category	Requested Funds	Cost-Match	TOTAL
Salaries	\$ _____	\$ _____	\$ _____
Travel	\$ _____	\$ _____	\$ _____
Supplies	\$ _____	\$ _____	\$ _____
Services	\$ _____	\$ _____	\$ _____
Equipment	\$ <u>XXX</u>	\$ _____	\$ _____
Other (Explain)	\$ _____	\$ _____	\$ _____
Indirect Costs*	\$ <u>XXX</u>	\$ _____	\$ _____
TOTALS:	\$ _____	\$ _____	\$ _____

**The NC State University/NASA National Space Grant College and Fellowship Program grant does not cover facilities and administrative costs. Unrecovered facilities and administrative costs may be used for required cost-matching.*

Budget Narrative: