

National Aeronautics and Space Administration

**Office of Inspector General**  
Washington, DC 20546-0001



July 23, 2014

North Carolina Space Grant  
Attn: Mr. Christopher Brown,  
North Carolina Space Grant Director  
North Carolina State University –  
Engineering Building III, Rm. 3002  
911 Oval Drive  
Raleigh, North Carolina 27606

**SUBJECT:** Audit of Grant Awarded to North Carolina State University  
(Report No. IG-14-027; Assignment No. A-14-005-00)

Dear Mr. Brown:

NASA awards approximately \$846 million in grants and cooperative agreements annually and faces the ongoing challenge of ensuring the Agency administers these awards appropriately and recipients accomplish the stated goals and objectives. In September 2011, the NASA Office of Inspector General (OIG) reported that NASA did not have an adequate system of controls in place to ensure proper administration and management of the Agency's grant program, and as a result, some grant funds had not been used for their intended purposes.<sup>1</sup> Following publication of that report, we began a series of audits examining specific NASA grants and cooperative agreements. In this letter, we present the results of our audit of the National Space Grant College and Fellowship Program (Space Grant) award to North Carolina State University (NC State).

## **Background**

In response to the need for a coordinated effort to help maintain America's preeminence in aerospace science and technology, the NASA Authorization Act of 1988 established Space Grant. The Program creates a national network of universities with interests and capabilities in aeronautics, space, and related fields, and encourages cooperative programs among universities, the aerospace industry, and Federal, state, and local governments. Additionally, the Program fosters interdisciplinary training, research, and informal education programs related to aerospace; promotes recruiting and training

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<sup>1</sup> NASA OIG, "NASA's Grant Administration and Management," (IG-11-026, September 12, 2011).

professionals for careers in aerospace science, technology, engineering, and mathematics with an emphasis on women, minorities and persons with disabilities; and endorses strong science, mathematics, and technology education from elementary through university levels.

To achieve these objectives, Space Grant provides funding to 52 consortia – one in each state, the District of Columbia, and Puerto Rico – of colleges and universities, associations, government agencies, industries, and informal education organizations involved in aerospace activities. Each consortium funds fellowships and scholarships for students pursuing careers in science, mathematics, engineering, and technology (STEM), as well as curriculum enhancement and faculty development in those fields. Member colleges and universities also administer pre-college and public service education projects in their states. Lead institutions within each consortium provide additional support for program objectives in their states and nationally by interacting with other universities to broaden joint activities with NASA and aerospace-related industries. In addition, these lead institutions are supposed to initiate activities to enhance their own research, training, and education capabilities in aerospace-related fields or conduct activities to expand the aerospace presence in their jurisdictions.

The North Carolina Space Grant Consortium (Consortium) consists of 13 member institutions and 7 industry, government, and nonprofit partners. NC State is the lead institution for the Consortium. Since its founding in 1991, the Consortium has managed nearly \$12 million in support to North Carolina citizens.

On January 29, 2010, NC State, as lead institution for the Consortium, applied for a five year training grant under the Space Grant program and listed the following goals in its proposal:

1. Deliver a competitive fellowship and scholarship program that provides research and education opportunities to students in STEM disciplines at Consortium affiliate institutions.
2. Strengthen North Carolina's aerospace-related research infrastructure and capabilities.
3. Provide groups of students with opportunities to engage in NASA-mission and STEM-based academic research and coursework.
4. Deliver activities that facilitate the Space Grant's focus on involving women, underrepresented groups, and persons with disabilities in all higher education program areas.
5. Equip North Carolina pre-service and in-service educators with tools to inspire the future STEM workforce to pursue education and careers in aerospace-related fields.
6. Increase interest in and understanding of NASA-mission and STEM activities by inspiring and engaging individuals of all ages throughout North Carolina.
7. Expand the geographic diversity and awareness of the Consortium.

In April 2010, NASA awarded a 5-year, \$2.87 million grant to NC State for the Consortium. The grant period is April 2010 to April 2015, and NC State receives \$575,000 each year. Under the terms of the grant, NC State is required to match NASA's funds with cash equivalents of \$2.12 million over the 5-year period.

The objective of our audit was to determine whether NC State used award funds for their intended purpose and whether costs claimed were allowable and in accordance with applicable laws, regulations, guidelines, and terms and conditions of the grant award. We reviewed internal controls as they related to the management of the award. Specifically, we reviewed the grantees (1) program performance and accomplishments, (2) accounting and internal control environment, (3) budget management and control, and (4) reporting. We also reviewed NASA's administration of the grant.

To accomplish our audit, we conducted interviews with NASA grant and technical officers. We also spoke with NC State and Consortium personnel responsible for the administration and management of the grant and visited NC State offices in Raleigh, North Carolina, to document accounting, procurement, and project management processes and internal controls. In addition, we reviewed laws, regulations, and documentation pertinent to our audit. Additional details of the audit scope and methodology, our review of internal controls, and prior audit coverage can be found in Appendix A.

## Results

We found that NC State managed the grant in accordance with applicable laws, regulations, guidelines, and the terms and conditions of the award. Specifically, we found that the NC State had a strong system of accounting and internal controls, adequately accounted for expenditures, properly managed its grant budget, and was on track to meet the majority of Program goals.

**NC State is Meeting Timelines for Achieving Program Goals.** The grant agreement requires NC State to submit annual reports to NASA summarizing progress toward meeting the goals set forth in the Consortium's proposal. Each progress report is reviewed by a NASA subject matter expert, a technical officer, a grants specialist, and the NASA Grant Officer.<sup>2</sup> In addition, NASA personnel review the reports for trends and contributions to Agency performance goals. NASA maintains the statistical data in the Agency's Office of Education Performance Management database.

We reviewed NC State's annual progress reports for fiscal years 2010 through 2013, and discussed them with the NASA Technical Officer. We found that NC State is meeting its goals in accordance with established timelines.

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<sup>2</sup> Per NASA Procedural Requirement 5800.1, "Grant and Cooperative Agreement Handbook," Section A, June 13, 2008, a grant officer is a Federal employee with delegated responsibility for grant administration.

**Cost Sharing Requirements Met.** The grant requires both NASA and NC State to contribute funds to advance agreement goals. According to NC State's proposal, it would provide matching funds for direct labor, supplies and materials, other current services, travel, and program funds. We found that NC State had matched funds in accordance with the agreement. In addition, we selected a judgmental sample of 10 cost sharing transactions and traced them through the University's accounting system to supporting documentation to ensure they were recorded in accordance with the agreement. We did not identify any exceptions. We also determined that NC State used grant funds for their intended purpose and did not identify any unallowable costs or claims. Finally, we noted NASA properly administered the award of the grant and appropriately monitored grant performance.

We appreciate the cooperation provided during this review. If you have questions or require additional information, please contact Laurence Hawkins, Audit Operations and Quality Assurance Director, Office of Audits, at 202-358-1543 or [laurence.b.hawkins@nasa.gov](mailto:laurence.b.hawkins@nasa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'PKMJA', written in a cursive style.

Paul K. Martin  
Inspector General

Enclosure

cc: Dr. Lennell Allen  
Director, Aerospace Research and Career Development Program

Jim Stofan  
Deputy Associate Administrator for Education Integration

Bill McNally  
Assistant Administrator for Procurement

## **Scope and Methodology**

We performed this audit from January 2014 through July 2014, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our overall objective was to determine whether NC State used awarded funds for their intended purpose and whether costs claimed were allowable and in accordance with applicable laws, regulations, guidelines, and terms and conditions of the award. We also reviewed internal controls as they related to the management of the award.

**Grant Selection.** We judgmentally selected this grant based on the length of the remaining performance period and the number of modifications.

**Grant Award File Documentation.** We reviewed grant award documentation, including proposal, budget, technical review reports, and summary financial reporting documentation. We worked with the NC State Compliance Specialist to obtain documents and conduct detail testing of selected expenditure transactions. To validate whether NASA grant funds were used for their intended purpose while also assessing the sufficiency of grantee performance, we performed substantive transaction testing. We obtained and reviewed relevant documents, including

1. background information on the projects funded with NASA grant agreement funds;
2. NASA's process for managing NC State's grant performance;
3. official grant agreement budgets approved by NASA;
4. detailed accounting records for expenditures charged to the grant agreement;
5. quarterly financial status reports and drawdown requests; and,
6. State of North Carolina Statewide Single Audits (A-133 reports) for fiscal years 2010 through 2013.

**Grantee Site Visits.** In February 2014, we met in Raleigh, North Carolina, with staff from N.C. State and the Consortium. We also interviewed NASA technical and procurement personnel responsible for the grant. In addition, we interviewed the Space Grant Principal Investigator concerning his role and to gain an understanding of the Space Grant Program.

**Testing Conducted.** We tested compliance with what we considered the most important conditions of the grant. The criteria we audited against included Federal requirements, the Grant Handbook, and the terms and conditions of the grant. In conducting our audit, we used a random number generator to select transactions for testing. This non-statistical sampling design does not allow projection of the test results to the universe from which the samples were selected. We selected 50 transactions through September 30, 2013, with an absolute value of \$30,049 for detailed review and evaluated whether they were properly recorded and allowable under the laws and terms of the cooperative agreement. Our review included tracing the transactions through N.C. State's accounting records to the supporting source documents.

We tested the following:

- **Program performance and accomplishments** to determine whether the grantee met grant objectives and collected data and developed performance measures to assess accomplishment of the intended objectives.
- **Budget management and control** to determine the amounts budgeted and the actual costs for each approved cost category, and to determine whether the grantee deviated from the approved budget and, if so, whether the grantee received the necessary approval.
- **Accounting and internal controls** to determine whether the grantee had sufficient accounting and internal controls to identify and report expenditures and reimbursements. This included testing
  - *grant drawdowns* to determine whether they were adequately supported and whether the grantee was managing receipts in accordance with Federal requirements;
  - *grant expenditures* to determine whether they were allowable under the terms and conditions of the grant award; properly authorized, classified, and supported; and allocable to the grant;
  - *grant reporting* to determine whether required reports were submitted on time and accurately reflected grant activity; and,
  - *grant cost sharing funds* to determine whether the grantee met cost sharing requirements.

We also determined, through limited testing, that the grantee did not generate or receive program income or have any property or equipment reportable to NASA.

**Federal Laws, Regulations, Policies, and Requirements.** We identified and reviewed relevant public laws, Office of Management and Budget (OMB) Circulars, NASA policy, and applicable NC State policy and guidance. Specifically, we reviewed:

- Public Law 95-224, “Federal Grant and Cooperative Act of 1977,” February 3, 1978
- Public Law 100-147, “NASA Authorization Act of 1988, Title II-National Space Grant College and Fellowship Program,” October 30, 1987
- 14 C.F.R. Part 1260, “Grants and Cooperative Agreements,” Subpart A, “General,” January 1, 2010
- 14 C.F.R. Part 1260, Subpart B, “Uniform Administrative Requirements for Grants and Cooperative Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations,” January 1, 2010
- OMB Circular A-110, “Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations,” January 10, 2010
- OMB Circular A-133, “Audits of Institutions of Higher Education and Other Non-Profit Institutions,” June 26, 2007
- OMB Circular A-21, “Cost Principles for Educational Institutions” (including the Cost Accounting Standards), May 10, 2004
- NASA Policy Directive 1200.1E, “NASA Internal Control,” July 21, 2008
- NASA Procedural Requirements (NPR) 9680.1, “NASA’s Financial Management of Grants and Cooperative Agreements,” November 10, 2011
- NPR 5800.1, “Grant and Cooperative Agreement Handbook,” Section A, June 13, 2008, and Section B, April 20, 2007
- Grant Information Circular (GIC) 12-03, July 12, 2012
- North Carolina State University, “Human Resources,” [http://www.ncsu.edu/human\\_resources/payroll/faculty\\_staff.php](http://www.ncsu.edu/human_resources/payroll/faculty_staff.php) (June 18, 2014)
- North Carolina State University, “TEARS Responsibilities,” <http://cng.ncsu.edu/policies/roles-responsibilities/tears/> (June 18, 2014)
- North Carolina State University, “REG 10.05.15 – TEARS (The Employee Activity Reporting System),” July 22, 2011, <http://policies.ncsu.edu/regulation/reg-10-05-15> (July 18, 2014)

- North Carolina State University, “REG 10.05.01 – Budgeting,” April 5, 2013, <http://policies.ncsu.edu/regulation/reg-10-05-01> (June 18, 2014)
- North Carolina State University, “REG. 10.05.02 – Cost Sharing,” July 22, 2011, <http://policies.ncsu.edu/regulation/reg-10-05-02> (June 18, 2014)

**Use of Computer-Processed Data.** We used computer-processed data from the Department of Health and Human Services Payment Management System to obtain grant drawdown and expenditure data. Additionally, we used computer-processed data extracted from NC State’s accounting system to determine the expenditure transactions charged to the grant. Although we did not independently verify the reliability of all this information, we compared it with other available supporting documents to determine data consistency and reasonableness. From these efforts, we believe the information we obtained was sufficiently reliable for our purposes.

## **Review of Internal Controls**

We reviewed the internal controls for the grantee’s administration and management of grants. We also interviewed officials responsible for directing NC State’s contracts and grants program. We learned about established policies and processes pertaining to the effectiveness and efficiency of operations, the payroll and timekeeping system, and the monitoring of grant performance.

## **Prior Coverage**

During the last 5 years, the NASA OIG and the Government Accountability Office (GAO) have issued eight reports of particular relevance to the subject of this report. Unrestricted reports can be accessed over the Internet at <http://oig.nasa.gov/audits/reports/FY14/index> (NASA OIG) and <http://www.gao.gov> (GAO).

### NASA OIG

“Audit of NASA Grant Awarded to Hudson Alpha Institute for Biotechnology” (IG-12-019, August 3, 2012)

“Audit of NASA Grants Awarded to the Philadelphia College Opportunity Resources for Education” (IG-12-018, July 26, 2012)

“Audit of NASA Grants Awarded to the Alabama Space Science Exhibit Commission’s U.S. Space and Rocket Center” (IG-12-016, June 22, 2012)

“NASA’s Use of Research Announcement Awards for Aeronautics Research” (IG-12-011, April 30, 2012)

“NASA’s Grant Administration and Management” (IG-11-026, September 12, 2011)



GAO

“Federal Grants: Improvements Needed in Oversight and Accountability Processes”  
(GAO-11-773T, June 23, 2011)

“Agencies Face Challenges in Tracking Contracts, Grants, Cooperative Agreements, and Associated Personnel”(GAO-10-509T, March 23, 2010)

“Department of Education Could Improve Its Processes with Greater Focus on Assessing Risks, Acquiring Financial Skills, and Sharing Information” (GAO-10-57, November 19, 2009)