A. PROGRAM DESCRIPTION
The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA’s interest as implemented by alignment with the Mission Directorates and the state’s interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Kansas Space Grant Consortium is a Program Grant Consortium funded at a level of $430,000 for fiscal year 2015 and $300,000 for fiscal year 2016.

It’s important to note that Kansas is one year out of phase with most other states in Space Grant activities. The current award start date is 2015, but activities started one year later in 2016. As a result, this document essentially outlines our first year of efforts.

B. PROGRAM GOALS
The following program goals were outlined in the grant proposal. Participation levels should resemble the Kansas underrepresented and female student enrollment percentages, which are 17% and 55%, respectively. Goals include actively involving women, underrepresented minorities, and persons with disabilities in all aspects of the programs.

NASA Internships, Fellowships, and Scholarships (NIFS) Program Goals
The goals include providing undergraduate and graduate student fellowships, internships, and scholarships that support STEM education. The specific goals consist of the following.

- Competitively fund eight (8) consortium students participating in NASA center internships.
• Competitively fund four (4) consortium students with STEM fellowships.
• Competitively fund thirty-four (34) students with STEM scholarships

Higher Education (HE) Project Goals
The goals include supporting students and groups participating in NASA-relevant experience-based activities. These may be multidisciplinary, multi-institution, and competitive projects. This also includes enhancement of university STEM faculty, academic program, and/or course content development, especially at non-PhD granting universities. The specific goals consist of the following.
• Competitively fund at least six (6) university student teams who participate in statewide, national, or international STEM-related competitions each year.
• Annually fund at least one (1) university to perform STEM academic program or course development, especially at non-PhD granting universities.
• Engage and support over two-hundred (200) students in consortium HE projects.

Research Infrastructure (RI) Project Goals
The goals include providing modest funding to support NASA-relevant research opportunities, especially for students and new faculty members who need assistance and have not yet become established researchers. The specific goal follows.
• Annually fund at least ten (10) students to work on NASA-relevant research projects or with the aerospace industry.

Precollege Education (PE) Project Goals
The goals include enhancing precollege student education by providing STEM workshop training for teachers (especially middle school) and precollege students. This typically involves a collaboration between education and STEM departments. Another goal is to assist in the development of instructional content (such as lesson plans, technology, etc.) that use emerging NASA-development technology. The specific goals consist of the following.
• Annually fund two (2) statewide teacher workshops that support at least fifteen (15) precollege, middle-school, STEM teachers.
• Support two (2) affiliate-level teacher workshops that engage at least thirty (30) STEM teachers.
• Offer at least two (2) STEM workshops for at least forty-five (45) precollege students.

Informal Education (IE) Project Goals
The goals include stimulating the public interest in STEM. This may be in providing information and activities to increase public appreciation for the direct and indirect benefits of NASA-sponsored research. The specific goal follows.
• Annually fund, at modest levels, experiences involving at least two-thousand (2000) people from the general public, highlighting STEM and NASA-related interests.

Diversity of Participation Goals
This goal applies to all aspects of the consortium’s activities. The consortium will attract, support, and retain women, underrepresented minorities, and persons with disabilities in all activities. This will be done by working closely with existing campus units to involve persons in these groups. The specific goals consist of the following.
• The annual program participation levels should resemble the Kansas underrepresented and female student enrollment percentages (i.e., 17% and 55%, respectively)
• Involve at least four (4) women, underrepresented minorities, or persons with disabilities in consortium management and administration.

Minority Serving Institution Goals
Haskell Indian Nations University is a member of the consortium. This minority-serving institution will add to the diversity of the state’s STEM workforce. The specific goals consist of the following.
• Maintain the Haskell affiliate representative’s involvement in consortium management.
• Support at least five (5) Haskell students each year with funds for STEM related experiences.
• Annually support at least three (3) Haskell faculty with funds for professional development.
• Support the development or enhancement of at least one (1) STEM related course or academic program every two years at Haskell.
• Engage, collaboratively, at least two (2) Haskell students or faculty yearly in activities.

C. PROGRAM/PROJECT BENEFITS TO PROGRAM AREAS

The Kansas Space Grant Consortium’s NIFS, Higher Education, and Research Infrastructure programs affected a large number of students. These activities were experiential and gives the students unique opportunities to become involved in activities outside of the classroom. This year, 97 students participated in these programs through support available through this grant. Underrepresented minorities made up 12% of the total participants and females made up 32% of these participants. Some comments made by program participants are included below.

Student: Lydia Bener
Program Element: FHSU Research Infrastructure
Mentor: C. D. Clark
Project: Experimental Laser Bio-Effects
Student’s Comment: Kansas Space Grant Consortium has enabled me to participate in an undergraduate research project.

Student: Seth Peery
Program Element: KCSC Summer Aerospace Camps
Mentor: Glen Duran
Project: KCSC Summer Aerospace Camp Leader
Student’s Comment: Working at the Cosmosphere has given me the skills to articulate my love for science in a positive and productive manner.

Student: Alex Taylor
Program Element: PSU Scholarship Program
Mentor: C. Shaver and J. Lookadoo
Project: Leadership and Innovative Design
Mentor’s Comment: This experience resulted in the student joining a graduate program and getting an assistantship.
In addition to supporting students, this grant resulted in eight (8) STEM-related academic program or course developments. Two (2) graduate students wrote their theses while supported by this grant. Two (2) peer-reviewed articles were published based on work done through this grant. One (1) proposal was submitted to the Air Force Research Laboratory as a result of this funding.

D. PROGRAM ACCOMPLISHMENTS

NASA Internships, Fellowships, and Scholarships
• The previous Kansas Space Grant NNX11AE14H was still active on a no-cost extension in 2015-2016 and the NASA center internships were funded using that grant. No (0) consortium students were funded on this Kansas Space Grant to participate in NASA center internships. (-)
• Five (5) consortium students were funded with STEM fellowships. (+)
• Forty-four (44) students were funded with STEM scholarships. (+)

Higher Education Projects
• Funding was provided for two (2) university student teams to participate in statewide, national, or international STEM-related competitions during this year. (-)
• Three (3) universities performed STEM-related academic program or course development during the year. Of those, one (1) is a PhD granting university and two (2) are non-PhD granting universities. (+)
• Twenty-one (21) students were supported in consortium HE projects. (-)

Research Infrastructure Projects
• Fifteen (15) students were funded to work on NASA-relevant research projects. (+)

Precollege Projects
• The previous Kansas Space Grant NNX11AE14H was still active on a no-cost extension in 2015-2016 and all teacher workshops were funded using that grant. No (0) teacher workshops at the statewide or affiliate level were funded on the current Kansas Space Grant. (-)
• STEM events were held at two (2) universities for a total of one-hundred-two (102) precollege students. (+)

Informal Education Projects
• Two (2) universities reported informal education projects involving sixty-three (63) participants. This number is below the goal of two thousand (2,000). However, as will be discussed in the Challenges section, one affiliate (Kansas State University) has not yet reported (due to an illness). We will provide updated data as soon as possible. (-)

E. PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE GOALS

• Diversity:
  o Of the ninety-seven (97) students participating in NIFS, Higher Education Projects, and Research Infrastructure Projects, twelve (12) were underrepresented and thirty-one (31)
were female. This results in 12% underrepresented and 32% female. Both of these fall below the targeted 17% and 55%, respectively. (-)

- The consortium administration consists of the Director, Associate Director (female), Program Coordinator (female), Administrative Assistant (female), and two student assistants (both female). This results in five (5) females in consortium administration.

- **Minority Serving Institutions**
  Unfortunately, two years ago, the Haskell affiliate representative took a sabbatical. Before her leave, she appointed another faculty member to take over her duties. The new affiliate representative has not been responsive to emails and letters. The Director of Kansas Space Grant Consortium is planning to make a visit to Haskell Indian Nations University to meet the new affiliate representative in hopes to regain their collaboration. However, at this time, Haskell Indian Nations University is not spending any funding and is not reporting on any activities. (-)

- **Office of Education Annual Performance Indicators:**
  - API 2.4.1: ED-16-1 ___43____
  - API 2.4.2: ED-16-2 ___0____
  - API 2.4.4: ED-16-4 ___2____
  - API 2.4.5: ED-16-5 ___63____

**F. IMPROVEMENTS MADE IN THE PAST YEAR**
As was briefly explained at the start of this document, Kansas is offset roughly a year from most states in Space Grant activities. Before Spring 2016, the consortium was still working on the no-cost extension of the previous grant, NNX11AE14H. The central office began charging to this grant in Spring 2016. All affiliates began their funding in Spring 2016, with the exception of WSU, which remained on the no-cost extension of NNX11AE14H until December 2016 (supporting three students on Research Infrastructure projects with this grant). In addition, all teacher workshops and NASA summer internships remained on the no-cost extension of NNX11AE14H.

Each affiliate had planned activities for more than one project element, with the exception of the minority-serving institution. By increasing the activities, the goal was to increase the number of people engaged.

It seems that the consortium has done well in reaching students at the college level; all NIFS and research infrastructure goals were met. In addition, the goal of developing courses at universities was met. There are some shortfalls in meeting the goal of having college teams attend competitions, holding teacher workshops, and engaging with the public. However, many of these deficits are a result of the overlap of finishing the old grant and starting the new one. We anticipate meeting goals as we enter the next year, when all activities will be funded from this grant alone.

**G. CURRENT AND PROJECTED CHALLENGES**
There are several challenges at this time.
• Haskell Indian Nations University (HINU) was an active member of the Kansas Space Grant Consortium for several years. However, two years ago, the affiliate representative changed and the university stopped being an active participant. At this time, there has been no communication with the current affiliate representative, despite numerous attempts via emails and letters. The central office is working to reestablish contact with HINU and believes the only way to get this university active again is to visit the affiliate representative to discuss what the Kansas Space Grant Consortium has to offer.

• Kansas State University has been active but did not report regarding this year’s activities. At this time, they have invoiced for approximately $30,000. Unfortunately, the affiliate representative has been unable to respond to reporting requests due to health problems. The central office is working with others at KSU to resolve the issues. We anticipate providing an update in the near future.

• Reporting for Informal Education events needs to be refined and completed to get a more accurate representation of the general public participation numbers. It is apparent that many were missed in this reporting. Indeed, we anticipate notable numbers from KSU and other ongoing activities. We anticipate providing an updated number in the near future.

• The affiliates will continue to focus on increasing participation of underrepresented, female, and disabled students.

H. PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION
There are currently eight affiliates with various activities planned for this grant. The activities proposed by each affiliate are listed here, while more detail about each may be found in the original grant proposal.

Emporia State University (ESU)
ESU has approximately 7000 students, with four major colleges. It is non-PhD granting.
- NIFS (Scholarship) project element: NASA Scholars Program (NSP)
- HE project element: Interdisciplinary Planetarium Content Development
- RI project element: Graduate Student Research Projects
- PE project elements: Master It Scholarship, Si Se Pueda
- IE project element: Peterson Planetarium Community Outreach Program

Fort Hays State University (FHSU)
FHSU has approximately 9000 students, with four major colleges. It is non-PhD granting.
- NIFS (Scholarship) project element: FHSU NASA KSGC Scholars Program
- HE project element: Undergraduate Research Experience
- RI project element: Undergraduate Research Experience
- IE project element: Pre-college Design Team

Haskell Indian Nations University (HINU)
HINU is a U.S. Bureau of Indian Affairs Native American University with approximately 1000 students. It is non-PhD granting.
- HE project element: HINU HE Support Program

The Kansas Cosmosphere and Space Center (KCSC)
KCSC is a world-class space science museum and education center.
• PE project elements: Teacher Workshop Program, Mars Rescue Mission, Space Junk
• IE project element: Camp Scholarships for Underrepresented Middle and High School Students

Kansas State University (KSU)
KSU is a STEM institution with approximately 23,000 students. It is PhD granting.
• NIFS (Scholarship) project element: Summer Undergraduate Research Opportunity Program (SUROP)
• HE project elements: NASA Senior Design Project, Summer Undergraduate Research Opportunity Program (SUROP) Cosmosphere Experience, Aero Design Team, AUVSI Team, Graduate Student Travel Grants
• IE project elements: Nuclear Reactor Tours and Education, Insect Zoo

Pittsburgh State University (PSU)
PSU has approximately 7000 students, with four major colleges of Arts and Sciences, Business, Education, and Technology. It is non-PhD granting.
• NIFS (Scholarship) project element: Undergraduate Leadership and Innovation (ULI) Project
• HE project elements: Rover Challenge, Embedded Systems Application, Aerospace Program Support

University of Kansas (KU)
KU is a STEM institution with approximately 30,000 students and 18 major colleges. It is PhD granting.
• NIFS (Fellowship) project element: Graduate Bridge (GB) project
• NIFS (Scholarship) project element: Diversity Program
• HE project elements: Research Experience for Undergraduates (REU), Enhancing Experiential Learning in the Curriculum (EELC), Student Teams in Experiential Learning Projects (STEP)
• RI project elements: Graduate Student Research Support (GSRS) Project, Undergraduate Student Research Support (USRS) Project
• IE project element: Experiential Learning Pathways (ELP)

Wichita State University (WSU)
WSU is a STEM institution with approximately 15,000 students. It is PhD granting. It includes the National Institute for Aviation Research.
• NIFS (Internship) project element: WSU Internship Program (WIP)
• NIFS (Fellowship) project element: Experimental Aerodynamics Fellowship (EAF)
• HE project elements: Jump Start Program (JSP), Experiential Learning Projects (ELP), Design/Build/Fly and Wichita Rocket Club (WRC) Team Support, Near Space Launch Program (NSLP)
• RI project element: Graduate Student Research Support (GSRS) Project
• IE project element: Camp for Women and Underrepresented Middle School Students

Consortium-wide Program
• NIFS (Internship) project element: NASA Center Internship Program (NCIP)