

Kansas Space Grant Consortium

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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 Consortium is a Program Grant Consortium funded at a level of \$535,000 for fiscal year 2008.

PROGRAM GOALS

The Kansas Space Grant Consortium (KSGC) goals and objectives identified in the FY 2008 proposal are outlined in the following sections.

- Outcome 1

This outcome remains the KSGC's primary area for focus, via Fellowship, Scholarship, Research Infrastructure, and Higher Education awards.

Based on the proposed funding levels, KSGC participation levels for FY2008 were to hold at or exceed the FY2007 target of one hundred twenty-five (125) student awards.

This value (i.e., 125 student awards) is the combined total for both affiliate and consortium-wide efforts. However, competitive awards should also support up to eleven (11) students to work at NASA centers, on NASA-funded or relevant projects, or with the aerospace industry.

- Outcome 2

Outcomes 2 are important and addressed for the most part via student team sponsorships and, especially, teacher in-service workshops. The KSGC proposes to meet FY2007 target levels as follows.

The target was to fund up to five (5) university teams working on STEM related design competitions sponsored, for example, by NASA, AIAA, SAE, or the FAA.

For Teacher In-Service Workshops the objective was to provide enhanced experiences for at least twenty (20) STEM educators.

- Outcome 3
Outcomes 3 are important and addressed via affiliate public interactions. The KSGC proposes to sustain Outcome 3 efforts at FY2007 levels. (Regrettably, specific target values were not specified in the FY 2008 proposal.)
- Underrepresented Minorities & Women
The Kansas consortium continues to target underrepresented minorities and women. The KSGC's objective was to improve total minority participation (to 18%) and to improve female participation (to 40%).
- Leadership

Additionally, the consortium leadership planned to re-engage the KCSC in consortium activities.

PROGRAM/PROJECT BENEFIT TO OUTCOME (1,2, OR 3)

The following highlight a few Kansas consortium outcomes worthy of special mention.

- Pittsburg State University (PSU) just completed the development of an Electronics Engineering Technology Aerospace Emphasis degree program. The new degree option allows competitive graduates to obtain high potential positions in the aircraft or satellite industries.
- A new KSGC Strategic Plan and, perhaps most importantly, new SMART objectives (not showed in this report), and a first trial of a related reporting system were implemented in November and March. The preliminary results of these efforts have been extremely positive. Follow-on analysis, discussions, corrections, and improvements by the consortium Executive Committee are planned.

PROGRAM ACCOMPLISHMENTS

Given the May 2009 start date and each affiliate, the KSGC is two semesters into its FY 2008 expenditures. This document reports on progress to May 2010. Expenditures during the summer were suspended until both a no-cost extension and a budget adjustment was approved. The current award and consortium work is set to finish in December 2010.

The following outlines program accomplishments relative to the goals and objectives noted in the Program Goals section above.

- Outcome 1
NASA's Outcome 1 remains the KSGC's primary area for focus, especially via Fellowship, Scholarship, Research Infrastructure, and Higher Education awards.
The FY2008 objective was to hold at or exceed one hundred twenty-five (125) student awards, including the support of eleven (11) students to work at NASA centers, on NASA-funded or relevant projects, or with the aerospace industry.

The current results are:

- 87 competitively funded undergraduate students participating in noteworthy educational activities
- 9 competitively funded F/S graduate students with STEM research or teaching assistantships
- 21 students working at NASA centers, on NASA-funded or NASA-relevant research projects, or with the aerospace industry
- 1 student supported on NASA Academy appointment
- 16 students on 4 different funded student teams
- 4 students funded with STEM-related graduate teaching assistantships
- 4 students funded with STEM-related undergraduate teaching assistantships
- Includes 15 underrepresented students
- Includes 22 female students
- 98% of the previously funded student have continued in STEM areas

As you can see, the Kansas consortium is very close to meeting it's FY 2008 NASA Outcome 1 student target goal of 125 (currently at 96 total students). There is one semester left.

- **Outcome 2**

Outcomes 2 are important and addressed via student team sponsorships and, especially, teacher in-service workshops.

The FY 2008 objective was to fund up to five (5) university teams to work on STEM related design competitions sponsored. Additionally, the KSGC aimed to provide enhanced experiences for at least twenty (20) STEM educators.

The current results are:

- 4 competitively funded university student teams (participating in statewide, national, or international STEM-related competitions)
- 31 pre-college STEM teachers participating in KSGC workshops

As you can see, the Kansas consortium has exceeded the FY 2008 targets. Additionally, there are two teacher workshops and fall student team activities yet to be reported on in the fall.

- **Outcome 3**

Outcomes 3 are important and addressed via affiliate public interactions. The KSGC proposed to sustain Outcome 3 efforts at FY2007 levels. (Unfortunately, no specific targets were specified)

Nonetheless, current results are:

- 840 public participants have been involved in funded experiences highlighting STEM and NASA-related interests
- Includes 198 underrepresented participants
- Includes 430 female participants

- Including 17 with disabilities

These numbers are significant. The Kansas Cosmosphere and Space Center, Emporia State University, and Fort Hays State University continue to support significant public service activities.

- Underrepresented Minorities & Women

The Kansas consortium objective was to improve total minority participation (to 18%) and to improve female participation (to 40%).

Current results for student participants in Outcome 1 and 2 activities are:

- 15.6% are underrepresented
- 22.9% are female
- 2.1% were disabled

Obviously, the consortium is not yet meeting the target objectives. The reasons for these shortcomings aren't fully understood. The Executive Committee plans to address the issue, and others, during upcoming meetings. Perhaps actions can be identified to improve results following the analysis and discussions.

- Leadership

Significant improvements have been implemented as a result of the improvements made following the 20th Program Review. An April meeting, with Diane DeTroye, detailed the changes. All review concerns were fully addressed. Affiliate responsibilities, reporting, and operations are now much improved. Furthermore a solid foundation for continued consortium improvements now exists.

The consortium desired to reengage the Kansas Cosmosphere and Space Center (KCSC) back into its activities. Fortunately, a new Affiliate Representative (Tom Holcomb) was appointed by the KCSC administration. The change has resulted in a significant increase of activities and steady participation in consortium involvement.

Additionally, with the exception of “red tape” related delays, the Haskell Indian Nations University (HINU) has restarted their consortium involvement. A mechanism to forward KSGC funds from the central office to Haskell was established. However, Haskell has another administrative layer that is delaying the expenditure of money. The issue should be resolved shortly.

PROGRAM CONTRIBUTIONS TO PART MEASURES

- Student Data and Longitudinal Tracking

- 96 students were competitively funded
- Including 9 underrepresented students
- Including 22 female students
- The status of only 51% of the previously funded students is known
- 80% of the previously funded students successfully tracked have continued in STEM areas

Unfortunately, quality longitudinal tracking data isn't yet available. The 2009-2010 data is very good, but presented longitudinal results are also based on weaker data from previous years. Future data should be notably better given the improvements recently made in the consortium's reporting processes.

- Course Development
 - 8 STEM and NASA relevant courses were developed or enhanced
 - 1 NASA STEM relevant academic program was developed (PSU)
- Matching Funds
 - For every \$1 dollar of NASA money spent the Kansas consortium spent \$0.75
- Minority-Serving Institutions

As was mentioned earlier, the Haskell Indian Nations University (HINU) has restarted their consortium participation. However, due to administrative issues at Haskell there was a delay in spending allocated funds. At this point, HINU has funded 5 students for STEM related experiences, supported 5 faculty development activities, developed or enhanced 3 courses, and had 7 significant collaborations with consortium, NASA, or industry involved in Research Infrastructure and Higher-Education.

IMPROVEMENTS MADE IN THE PAST YEAR

Sadly, as was identified in the 20th Year review and acknowledged by the consortium director, the program goals and objectives used in the FY 2008 proposal are not as SMART as desired.

Fortunately, new KSGC goals and objectives have recently been developed. The new objectives are SMART, and much more comprehensive. Indeed, a matching reporting system was trialed twice in the last year as a means to evaluate the new SMART objectives.

The new objectives and reporting scheme have already proved valuable - not only as a means to track progress, but to identify ways to effectively change and improve the consortium.

PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

The following information outlines the basic characteristics of the consortium affiliate members:

- Emporia State University (ESU) - approximately 7,000 students, with four major colleges including Business, Liberal Arts and Sciences, School of Library and Information Management, and the Teachers College (non-Ph.D. granting)

- Fort Hays State University (FHSU) - approximately 9,000 students, with four major colleges including Arts and Sciences, Education and Technology, Business and Leadership, and Health and Life Sciences (non-Ph.D. granting)
- Haskell Indian Nations University (HINU) - approximately 1,000 students, the U.S. Bureau of Indian Affairs Native American University (non-Ph.D. granting)
- The Kansas Cosmosphere and Space Center (KCSC) - a world-class space science museum
- Kansas State University (KSU) - a STEM Ph.D. granting institution, with approximately 23,000 students, nine major colleges including Arts and sciences, engineering, education, and agriculture
- Pittsburg State University (PSU) - approximately 7,000 students, with four major colleges of Arts and Sciences, Business, Education, and Technology (non-Ph.D. granting)
- University of Kansas (KU) - a STEM Ph.D. granting institution, with approximately 30,000 students, eighteen major colleges including Liberal Arts and sciences, engineering, education, and medicine
- Wichita State University (WSU) - a STEM Ph.D. granting institution, with approximately 15,000 students