



## AGENDA

### **SD Space Grant Consortium “Quarterly Meeting” Teleconference July 21, 2006 (10:30 a.m. – 1:30 p.m. Central Time)**

- **Overview/discussion of upcoming South Dakota Space Day – Oct. 18, 2006 in Pierre**
- **Longitudinal Tracking**
- **Upcoming student Fellowship/Scholarship stipend opportunity (Call for Applications to be announced at start of Fall 2006 semester)**
- **Program Initiation Grant opportunities (available to Consortium membership based on competitive proposals for Higher Education, Research Infrastructure, and Precollege programs)**
- **Announcement for Kelly Lane Earth & Space Science Teacher Professional Development Grant**
- **Other?**
- **Review of Consortium Strategic Plan objectives, including an assessment of how we are meeting outcome measures based on the Strategic Plan**
  1. **Strategic Plan available at <http://www.sdsmt.edu/space/SDSGC-StrategicPlan9-7-05.pdf>**
  2. **Quantitative Outcome Measures Matrix Tables (per FY2005 SDSGC Progress Report) and associated FY2006 Program Plan comments**
- **Adjourn**

**Notes:** Please have a copy of our Strategic Plan available during the telecon. This important item will take a while, so we need to leave time for it (the majority of the 3 hours). The Strategic Plan is available at the website above. The “Quantitative Outcome Measures Matrix” Tables (for each of the six program areas) clipped from SDSGC’s FY2005 Progress Report to NASA are attached here. Those tables indicate whether the outcome measures were either a) completed, b) partially completed, or c) incomplete in FY2005. Following each of the six matrix tables, there is a summary of the outcomes that were either partially or not completed in FY’05 that we said would be either completed or revised in FY’06 (excerpted from SDSGC’s FY2006 Program Plan to NASA). The matrix tables and summary of outcomes partially or not completed in FY’05 are also attached to this agenda. During the telecon, we will go over these measures again to see which ones still apply this year (FY2006) and whether we are on track to completing or revising them as stated.

**Materials for Assessment of Outcome Measures based on Strategic Plan  
(re: July 21, 2006 SDSGC Teleconference)**

**Description of the following Report Format**

**(clipped from sections of SDSGC's FY2005 Progress Report & FY2006 Program Plan)**

Each of the six “Program Areas” below begins with a “Quantitative Outcome Measures Matrix” table indicating whether the outcome indicators from the Consortium’s 2005 Strategic Plan for that program area were either A) completed (or “realized”), B) partially completed, or C) incomplete. Outcomes that are conceptually repeated in other program areas are shown in gray. Highlights of selected accomplishments are given in the FY2005 Progress Report (not included here). For the outcomes that were only partially achieved or incomplete during FY2005, an explanation is clearly given following each matrix table of how and when the desired outcome will be completed during FY2006 or whether the intended outcome has been revised.

**1. Management**

**Quantitative Outcome Measures Matrix (Management)**

**Completed**  
**Partially Completed**  
**Incomplete**

<b>Objective</b>	<b>Outcome indicator(s)</b>			
<b>1.1</b>	All reports will be submitted on time and in accordance with NASA guidelines.	√		
<b>1.2</b>	At least two faculty will visit NASA Centers or EROS each year to promote collaborative research	√		
	At least three students will participate in internship programs at NASA Centers.	√		
	At least five student interns will be placed at EROS (SAIC)	√		
	Representatives of the Management Team will be present at biannual national meetings and the Western Region Space Grant Meeting.	√		
	Members of the Management Team also hold positions on the Technical Advisory Committee and the Steering Committee of the state NASA EPSCoR Program	√		
<b>1.3</b>	Announce available positions on Management Team to all Consortium members and affiliates and select two members by January, 2005.	√		
	Draft roles and responsibilities document by March, 2005.	√		
	Semi-annual electronic newsletter sent to all member institutions, affiliates, teachers, and interested parties.		√	
<b>1.4</b>	Members of the Management Team meet once per year with representatives of state government to discuss alignment with state priorities, such as the Governor's 2010 Initiative	√		
	At least one additional representative of state government will be appointed to the advisory board by August, 2005	√		
<b>1.5</b>	Aerospace industry survey of about 95 industries in South Dakota completed by May, 2005	√		
	At least one additional representative of state industry will be appointed to advisory board by February, 2006	√		
<b>1.6</b>	Electronic databases available by November, 2005 and updated quarterly thereafter	√		
	Consortium website completely redesigned by faculty and students at the Center of Excellence in Computer Information Systems at Dakota State University by February, 2006		√	

1.7	Draft annual Development Plan complete by November, 2005			√
	Review of other state strategic plans complete by February, 2006	√		
	At least 20 targeted announcements of opportunity will be disseminated through electronic newsletter and website each year	√		
	Facilitate at least one multi-partner proposal each year to NASA or other agencies	√		
1.8	Diversity will be modeled in all aspects of the Consortium and participation by underrepresented groups will increase -- participating organizations	√		
	Diversity will be modeled in all aspects of the Consortium and participation by underrepresented groups will increase -- programs	√		
	Diversity will be modeled in all aspects of the Consortium and participation by underrepresented groups will increase -- fellowships and scholarships	√		
	Diversity will be modeled in all aspects of the Consortium and participation by underrepresented groups will increase -- faculty awards	√		
	Diversity will be modeled in all aspects of the Consortium and participation by underrepresented groups will increase -- Management Team members	√		
	NASA content or other STEM educational opportunities are expanded at the South Dakota School for the Deaf and the South Dakota School for the Blind and Visually Impaired			√
1.9	Program evaluator selected by March, 2005 and participates in subsequent quarterly meetings	√		
	Following submission of the Program Evaluator's final report in February 2006, the Management Team will determine appropriate data collection and evaluation procedures that are consistent with available resources		√	
	Consortium website completely redesigned by faculty and students at the Center of Excellence in Computer Information Systems at Dakota State University by February, 2006 so as to collect evaluation data		√	
	Strategic plan updated at an annual performance audit meeting	√		
	The advisory board will be convened for an annual meeting by February, 2006			√

### Management Outcomes Partially/Not Completed in FY'05 to be Completed/Revised in FY'06

Twenty-three (77%) of the 30 Management outcomes identified in SDSGC's Strategic Plan were completed in FY2005 (see Management "Quantitative Outcome Measures Matrix Table" in FY2005 Progress Report). Those outcomes will continue to be met in FY2006. The following seven outcomes that were partially or not completed in FY2005 will either be completed or revised in FY2006.

- Strategy/Outcome 1.3.3 will be revised. As a result of effective email communication among Consortium affiliates and other educational entities and teacher groups during 2005, and considering that Space Grant and other NASA educational information often needs to be distributed as soon as it becomes available, email will be used in lieu of a semi-annual electronic newsletter. Beginning in February 2006, SDSGC announcements are posted on the websites of the SD Science Teachers' Association and the SD Mathematics Teachers' Association.
- Per Strategies/Outcomes 1.6.2, 1.9.2, and 1.9.3, the Management Team solicited the assistance of faculty and students in the Department of Computer Information Systems at affiliate Dakota State University (DSU) and entered a subcontract during FY2005 to completely redesign the Consortium's website [www.sdsmt.edu/space](http://www.sdsmt.edu/space) to a more appealing, functional, user-friendly format. A major improvement to the website will be implementation of web-based evaluation and tracking projects,

including student longitudinal tracking. DSU students are particularly qualified to design and execute these improvements, and the activity will provide an opportunity for DSU students and faculty to become more involved in the Consortium. The redesign will be completed by November 2006 and control of website content will remain with the SDSGC management.

- Per Strategy/Outcome 1.7.1, a Development Plan that identifies opportunities to increase funding, staffing, and matching for the Consortium’s program will be developed and approved by the Management Team by November 2006.
  - One immediate goal of the Development Plan is to seek industry contributions to support statewide science contests, K-12 teacher professional development, and precollege robotics programs.
  - A second immediate goal of the Development Plan is to seek statewide coordination and cost-sharing benefits through closer collaboration with the various state EPSCoR programs (NSF, NIH, DoD, DOE) and the state’s Science and Technology Entrepreneurship Program.
- In an initial attempt to pursue Strategy/Outcome 1.8.2 regarding diversity and outreach to persons with disabilities in 2005, SDSGC sent two targeted announcements of NASA workshops for the disabled to the superintendents of the SD School for the Deaf and the SD School for the Blind and Visually Impaired in 2005. Although the desired outcome was not met in 2005, SDSGC’s Management Team is not yet sure how fruitful the initial efforts will be. By October 2006, members of SDSGC’s Management Team will conduct discussions with the Directors of SD schools for the deaf and blind with the purpose of increasing NASA and STEM opportunities for the disabled.
- Per Strategy/Outcome 1.9.5, SDSGC’s Advisory Board will convene by September 30, 2006.

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## 2. Fellowships and Scholarships

**Completed**  
**Partially Completed**  
**Incomplete**

**Quantitative Outcome Measures Matrix (Fellowships)**

Objective	Outcome Indicator			
2.1	A centralized, Consortium-wide annual Call for Fellowship/Scholarship Applications shall be implemented in 2005 and made available to all of the Consortium’s higher educational members and affiliates via e-mail and the SDSGC website	√		
	Competitive review and selection of awardees	√		
	Awards reflect the diversity of the Consortium’s membership and statewide balance	√		
2.2	Augustana College will provide opportunities for three students for research projects at EROS in 2005.	√		
	At least two SD Space Grant Fellows will participate in SD NASA EPSCoR research projects annually.	√		
	Offer research fellowships that support SDSGC initiatives (Badlands Observatory astronomical research or "Dark Skies, Bright Minds" program, robotics, NASA's "Microgravity University: Reduced Gravity Student Flight Opportunity Program, etc.) At least three fellowships offered each year.	√		

2.3	In 2005, at least three interns will be placed at NASA Centers and at least five student interns will be placed at EROS-SAIC	√		
	At least two STEP fellows receive supplemental funding through SDSGC each year.			√
2.4	100% of all student researchers funded through NASA South Dakota Space Grant will present results each year.		√	
	Opportunities will be offered to 100% of SDSGC student fellows to take advantage of professional development training.	√		
2.5	Awards to women/minorities equal or exceed 10% to minorities and 40% to females	√		
	At least one fellowship awarded annually to a student at a Tribal College or to a Tribal College student seeking to transfer to another SDSGC university	√		
2.6	Use of a web-based system will improve SDSGC's ability to assess the impact of its student programs and to maintain better contact with graduates of the program		√	
2.7	Adjustments are made to the fellowship and scholarship program to strengthen activities that are working and drop or correct activities that are not having the intended impact.		√	

Fellowship Outcomes Partially/Not Completed in FY'05 to be Completed in FY'06

Ten (71%) of the 14 Fellowship outcomes identified in SDSGC's Strategic Plan were completed in FY 2005 (see Fellowship "Quantitative Outcome Measures Matrix Table" in FY2005 Progress Report). Those outcomes will continue to be met in FY2006. The following four outcomes that were partially or not completed in FY2005 will be completed in FY2006.

- Per Strategy/Outcome 2.3.2, at least two student awardees of the state's Science and Technology Entrepreneurship Program (STEP) fellowships were to receive supplemental funding through SDSGC in FY2005. Because efforts to combine announcements for STEP and Space Grant fellowships are currently underway, it is expected that appropriate STEP fellows with NASA-related entrepreneurial interests will receive supplemental Space Grant funding in the Fall 2006 and/or Spring 2007 semester.
- Per Strategy/Outcome 2.4.2, the majority of FY2005 student researchers funded through NASA South Dakota Space Grant presented their results to campus peers, professional organizations, precollege students, or civic groups in order to highlight their research and raise the level of awareness of NASA in the community. Research presentations will be made a higher priority for all student fellows receiving FY2006 Space Grant funding.
- Strategies/Outcomes 2.6.1 and 2.7.1 address student longitudinal tracking and will be achieved through the Consortium's website improvements currently underway and according to the timetable described above under Management Strategies/Outcomes 1.6.2 and 1.9.3.

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### 3. Research Infrastructure

**Completed**  
**Partially Completed**  
**Incomplete**

**Quantitative Outcome Measures Matrix (Research Infrastructure)**

<b>Objective</b>	<b>Outcome indicators</b>			
<b>3.1</b>	At least ten research announcements are distributed among appropriate SDSGC institutions each year	√		
	At least one NASA-related research proposal is submitted each year as a result of SDSGC coordination (see also 1.7.4)	√		
<b>3.2</b>	At least five Program Initiation grants are supported each year from SDSGC and/or state NASA EPSCoR funds	√		
<b>3.3</b>	At least five travel grants for research development are awarded each year from SDSGC and/or state NASA EPSCoR funds (see also 3.3.2)	√		
	At least two SDSGC fellowships or scholarships are awarded each year for students two work on NASA EPSCoR or other NASA-related research projects (see also 2.2.2)	√		
	Members of Management Team also hold positions on Technical Advisory Committee and Steering Committee of the state NASA EPSCoR Program (see also 1.2.3)	√		
	At least five planning trips to NASA Centers or EROS are supported each year from SDSGC and/or state NASA EPSCoR funds (see also 3.2.2)	√		
	An initial research needs and capabilities assessment of SDSGC academic institutions is completed by June, 2006			√
	An initial survey of state industries with potential aerospace capabilities is completed by May, 2005 (see also 1.5.1)	√		
	At least five announcements of research opportunities at state and federal agencies are distributed annually to faculty at SDSGC academic institutions	√		
<b>3.4</b>	Full or partial funding for new equipment and facilities is awarded to SDSGC institutions through SD NASA EPSCoR or SDSGC	√		
	At least three test sites are developed using imagery from the NASA-USGS EO-1 satellite (Hyperion and Advanced Land Imager sensors); two of the sites are located to support Tribal College research projects		√	
	A physical or electronic catalog of the remote sensing library holdings at EROS is prepared and distributed to SDSGC institutions and other interested parties	√		
	SDSGC members receive information on satellite imagery available through SDView	√		
<b>3.5</b>	At least two college or pre-college research or design teams receive SDSGC funds each year	√		
	SDSGC industrial and state government affiliates will be contacted regarding the needs and benefits of pre-college engineering design programs			√
<b>3.6</b>	Work with admissions officers at SDSGC academic affiliates and with SDSGC's network of K-12 and informal education contacts to improve recruitment of qualified female students and students from underrepresented groups into STEM careers through activities such as Women in Science Conferences, FIS Success Academy, NES, and Space Day at the Pow Wow.	√		
	SDSGC fellowship/scholarship funds for research or design experiences at SDSGC academic institutions, EROS, and NASA Centers will equal or exceed 10% to minorities and 40% to females (see also 2.5.1)	√		
	Uniform system for tracking academic performance and research activities of underrepresented SDSGC student scholars and fellows in place by June 2006		√	
<b>3.7</b>	Adjustments are made to the research infrastructure program to strengthen activities that are working and drop or improve activities that are not having the intended impact		√	

Research Outcomes Partially/Not Completed in FY'05 to be Completed/Revised in FY'06  
Fifteen (75%) of the 20 Research Infrastructure outcomes identified in SDSGC's Strategic Plan were completed in FY 2005 (see Research "Quantitative Outcome Measures Matrix Table" in FY2005 Progress Report). Those outcomes will continue to be met in FY2006. Some of those outcomes that were partially met and had either Management or Fellowship components are addressed above. The following outcomes that were partially or not completed in FY2005 will either be completed or revised in FY2006.

- Per Strategy/Outcome 3.3.3, an initial research needs and capabilities assessment of SDSGC academic institutions was to be completed by June 2006 in an effort to promote research collaboration among the state's academic institutions with an emphasis on programs that link faculty at institutions with limited research infrastructure (including Tribal Colleges) and faculty at research-intensive institutions. The Consortium's Management Team will bring this item before the Advisory Board during FY2006 to solicit advice on whether this outcome is a priority considering the Governor's 2010 Initiative and the limitations of SDSGC's research infrastructure resources.
- Per Strategy/Outcome 3.4.2, work was initiated in 2005 to develop and maintain at least three remote sensing test sites using imagery from the NASA-USGS EO-1 satellite (Hyperion and Advanced Land Imager sensors). Two of the selected sites were located to support Tribal College research projects at affiliate institutions Oglala Lakota College and Sinte Gleska University and all three sites will promote long-term interdisciplinary research and training collaborations among SDSGC institutions and attract collaborations from external partners. These sites will be fully established by July 2006.
- Per Strategy/Outcome 3.5.2, in order to encourage public and private partnerships to sponsor pre-college engineering design teams such as robotics teams, SDSGC industrial and state government affiliates were to be contacted in FY2005 regarding the needs and benefits of pre-college engineering design programs. This desired outcome will be addressed through the development of SDSGC's Development Plan by November 2006 as discussed above under Management Strategy/Outcome 1.7.1.
- Per Strategy/Outcome 3.7.1, simple before-and-after surveys of faculty and students involved in research infrastructure activities were to be taken to assess their knowledge and attitudes about the Consortium, NASA, and STEM careers in order to adjust the research infrastructure program to strengthen activities that are working and drop or improve activities that are not having the intended impact. This partially completed item will be further developed by November 2006 through the efforts of the graduate fellow specializing in evaluation and assessment and will be incorporated into SDSGC's web-based survey capabilities within the redesigned website discussed above under Management Strategies/Outcomes 1.6.2 and 1.9.3.

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## 4. Higher Education

**Completed**  
**Partially Completed**  
**Incomplete**

**Quantitative Outcome Measures Matrix (Higher Ed)**

Objective	Outcome Indicators			
4.1	Reorganize the "Educational Opportunities (Higher Education)" section of SDSGC website to make it more user friendly; add a web counter to monitor access and an online feedback section (see also 1.9)		√	
	At least ten NASA education announcements are distributed among appropriate SDSGC institutions each year	√		
4.2	At least two faculty or students from SDSGC affiliates will participate in NASA education programs each year	√		
4.3	Directors of new research centers and new Ph.D. programs are informed of SDSGC fellowship/ scholarship and other programs	√		
	At least two STEP fellows will receive supplemental funding through SDSGC each year (see also 2.3.2)			√
4.4	An initial survey of state industries with potential aerospace capabilities is completed by May 2005. (See also 1.5.1.)	√		
	At least one representative of SDSGC will attend the conference and promote partnerships between industry and academic affiliates	√		
4.5	Participation by women and minorities will equal or exceed 10% to minorities and 40% to females (see also 2.5.2)	√		
4.6	Adjustments are made to the higher education program to strengthen activities that are working and drop or improve activities that are not having the intended impact		√	

Higher Education Outcomes Partially/Not Completed in FY'05 to be Completed in FY'06

Six (67%) of the nine Higher Education outcomes identified in SDSGC's Strategic Plan were completed in FY 2005 (see Higher Education "Quantitative Outcome Measures Matrix Table" in FY2005 Progress Report). Those outcomes will continue to be met in FY2006. Some of those outcomes that were partially met and had either Management or Fellowship components are addressed above. The following outcome that was partially completed in FY2005 will be completed in FY2006.

- Per Strategy/Outcome 4.6.1, simple before-and-after surveys of selected faculty and students were to be taken to assess their knowledge and attitudes about the Consortium, NASA, and STEM careers in order to adjust the higher education program to strengthen activities that are working and drop or improve activities that are not having the intended impact. This partially completed item will be further developed by November 2006 as part of SDSGC's web-based survey capabilities within the redesigned website discussed above under Management Strategies/Outcomes 1.6.2 and 1.9.3.

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## 5. K-12 Outreach

**Completed**  
**Partially Completed**  
**Incomplete**

**Quantitative Outcome Measures Matrix (Precollege)**

Objective	Outcome indicator(s)			
5.1	Electronic databases available by November, 2005 and updated quarterly thereafter	√		
5.2	SDSGC members will participate in at least one precollege education proposal by the end of 2006	√		
5.3	SDView will conduct and publish the results of a K-12 geospatial education needs assessment survey		√	
	At least 100 teachers will participate in workshops facilitated by SDSGC such as NASA AESP training, GIS/GPS training, E-missions, GEMS, StarLab Planetarium astronomy training, UMAC's Earth Science Tools for Educators workshop, and NASA Speaker's Bureau	√		
	Website is updated at least monthly: add a web counter to monitor access and an online feedback section (see also 1.9)		√	
	At least two South Dakota schools (at least one Tribal school) apply for the 2005 NASA Explorer Schools Program	√		
5.4	At least 1,000 people will attend South Dakota Space Days at the Black Hills Pow Wow, Oct. 7, 2005, in Rapid City		√	
	Over 3,000 students each year participate through Women in Science Conferences, K-12 science fairs, Aerospace Career and Education Camp, Flandreau Indian School Success Academy, Badlands Observatory's "Dark Skies, Bright Minds" educational program, RoboCamp, and related programs	√		
5.5	These teacher-training programs embrace state education standards in math, science, and language arts and will introduce at least 50 teachers to NASA and space science curricula	√		
5.6	Over 1,000 females and students from underrepresented groups participate each year through Women in Science Conferences, K-12 science fairs, Aerospace Career and Education Camp, Flandreau Indian School Success Academy, Badlands Observatory's "Dark Skies, Bright Minds" educational program, RoboCamp	√		
5.7	Adjustments are made to the precollege education program to strengthen activities that are working and drop or improve activities that are not having the intended impact		√	

Precollege Outcomes Partially Completed in FY'05 to be Completed/Revised in FY'06

Seven (64%) of the 11 Precollege outcomes identified in SDSGC's Strategic Plan were completed in FY 2005 (see Precollege "Quantitative Outcome Measures Matrix Table" in FY2005 Progress Report). Those outcomes will continue to be met in FY2006. One of the outcomes that was partially met and had either Management, Fellowship, Research, or Higher Education components are addressed above. The following three outcomes that were partially completed in FY2005 will be met in FY2006.

- Per Strategies/Outcomes 5.3.1 and 5.7.1, surveys of selected participants of Space Grant-supported precollege programs were to be taken to assess their geospatial needs and their knowledge and attitudes about the Consortium, NASA, and STEM careers in order to adjust the precollege education program to strengthen activities that are working and drop or improve activities that are not having the intended impact. This partially completed item will be further developed by November 2006

as part of SDSGC’s web-based survey capabilities within the redesigned website discussed above under Management Strategies/Outcomes 1.6.2 and 1.9.3.

- Per Strategy/Outcome 5.4.1, at least 1,000 people were expected to attend “South Dakota Space Day at the Black Hills Pow Wow: Merging Technology and Tradition” on Oct. 7, 2005 in Rapid City. Only about 250 Native American students were reached because the event date had to coincide with the Black Hills Pow Wow in order to reach the goal of linking Space Day with the Pow Wow. Beyond anyone’s control, the date happened to fall on a teacher in-service day and the public schools were closed. SD Space Day typically reaches 2,000 – 7,000 students and will achieve this outcome again in October 2006 when it will be held in Pierre, the state capitol.

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## 6. Public Service

**Completed**  
**Partially Completed**  
**Incomplete**

**Quantitative Outcome Measures Matrix (Public Service)**

Objective	Outcome indicator(s)			
6.1	Reorganize the "General Public" section of SDSGC website to make it more user friendly: add a web counter to monitor access and an online feedback section (see 1.9.3)		√	
	NASA and SDSGC will be advertised daily during the work week in 2005	√		
6.2	SDSGC staff will produce and give formal and informal presentations to various civic and other public groups, and will generate press releases about Consortium activities	√		
	At least 1,000 students, parents, and teachers will hear from NASA speakers and experience hands-on demonstrations and exhibits from SDSGC academic, government, and industry affiliates	√		
	Approximately 2,500 middle and high school students across the state will have been engaged with hands-on science activities and SDSGC will have awarded prizes at all three science fairs		√	
6.3	Participants in South Dakota Space Days and science fairs will include at least 10% Native Americans and 40% females	√		
6.4	Adjustments are made to the public service program to strengthen activities that are working and drop or improve activities that are not having the intended impact		√	

### Public Service Outcomes Partially/Not Completed in FY‘05 to be Completed/Revised in FY‘06

Four (57%) of the seven Public Service outcomes identified in SDSGC’s Strategic Plan were completed in FY 2005 (see Public Service “Quantitative Outcome Measures Matrix Table” in FY2005 Progress Report). Those outcomes will continue to be met in FY2006. The three outcomes that were partially met and had either Management or Precollege components and are addressed above under those program areas.