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National Council of Space Grant Directors' Meeting
Westin Embassy Row Hotel, Washington, DC
February 28 - March 1, 2008

A. Council Meeting, Thursday, February 28, 2008, Afternoon

1. Executive Committee Meeting Report by Chris Koehler (CO), Vice-Chair and Acting Chair: Chris explained that the Executive Committee decided to give an oral summary of the discussions and decisions that take place in the Executive Committee Meetings to the Council. He then went over the most important points discussed in the Executive Committee Meeting that morning.

2. Joyce Winterton, NASA HQ, Associate Administrator for Education: Joyce explained that the NASA priorities for 2008 are the following:

- Constellation Program: to achieve the objectives of maintaining American presence in low Earth orbit, returning to the Moon for purposes of establishing an outpost, and laying the foundation to explore Mars and beyond in the first half of the 21st century.
- Sustainability of the Planet
- Innovation and Economic Development
- STEM education

and that the NASA Office of Education priorities in 2008 are the following:

- Understanding where we are investing our dollars
- Conduct a portfolio gap analysis
- Document what we are doing right
- Communicate all of the above

She recently had the opportunity to give a briefing for the NASA Advisory Council Human Capital Subcommittee, where she emphasized the achievements of programs implemented by the NASA Office of Education, such as Space Grant, in the following areas:

- Strengthening NASA's and the Nation's future workforce: 45% are employed by NASA, aerospace contractors, universities and other education institutions; 29% went into related science, technology, engineering or mathematics careers; 30% of undergraduates seek advanced education; 2.5K students received significant support (\$5K or 160 hours) through Space Grant
- Attracting and retaining students in STEM disciplines: 62% of educators who participate in NASA training programs use the resources in their instruction; 50% of Science, Engineering, Mathematics, and Aerospace Academy (SEMAA) students plan to work in STEM careers; 408,000 students participated in K-12 NASA activities; the NASA Education website registered 45 million of visitors.
- Engaging Americans in NASA's mission: there are 350 Museums and Science Centers engaged in major NASA events; a total of 1750 informal education providers are directly served by NASA resources

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There has been notable progress on key issues: performance measurement, evaluation, and portfolio management.

There will be a series of educational initiatives in FY 2008 open to competition: \$14.1 M to be awarded to public schools and non-profit organizations; \$8.5M to educate students on global climate change; \$9.4M for science museums and planetaria to enhance programs related to space exploration, aeronautics, space science, earth science or microgravity. In addition, there will be \$7M for the development of educational activities at NASA Centers.

Student Ambassadors Program: This is a virtual student community designed to foster greater interaction and mentoring relationships among NASA interns; They will have special participation in NASA events, and the opportunity to be apprised of employment opportunities and educational experiences; Through their participation in this program, they will develop skills and increase their likelihood of entering the NASA workforce.

The total NASA Education budget for FY08 is \$189.3M:

- 78% comes from Headquarters, 16% comes from the Missions, and 6% comes from the Centers.
- 59% goes to Outcome 1, 28% goes to Outcome 2, 10% goes to Outcome 3; 3% goes to Cross Cutting Costs.

3. Council's Financial Report, Peter Sukanek (MS), Treasurer: Peter explained that the Council's account has remained practically unchanged since last year and that the overall check activity is very limited, with less than 30 checks drawn in total. He presented a motion to the Executive Committee to have the Space Grant Foundation take care of the account from now on, which was approved.

4. Elections of the National Council of Space Grant Directors:

- Council Chair: Chris Koehler (CO)
- Executive Committee: Erian Armanios (GA), Chris Brown (NC), John Gregory (AL)
- Nominating Committee: Bill Garrard (MN), John Wefel (LA)

5. OMB's Perspectives on NASA Education, Amy Kaminski, OMB Program Examiner

The Office of Management and Budget (OMB):

- is responsible for preparing the President's budget request.
- works with the agencies to make sure that they implement sound practices of management.

Less than 20% of the national budget is devoted to non-mandatory non-defense programs.

Her responsibility is to ensure that STEM dollars are spent wisely by:

- avoiding unnecessary duplication
- doing proper coordination
- emphasizing outcome oriented performance
- developing metrics to measure the achievements

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She also explained that the difference between Earmarks and Plus ups is that the latter has no specific recipient (person or institution) in the legislation language. This is the case of Space Grant and EPSCoR.

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6. Oklahoma Space Grant Consortium High Endurance UAV Projects,
Andy Arena, Deputy Director, Oklahoma Space Grant Consortium

- Dragonfly: the Most Memorable Aviation Record of 2006, 12 hours flight duration
- It started as an OSGC undergraduate workforce project (2 aerospace engineering undergraduates)
- The goal was to design a highly efficient electric plane capable of setting Fédération Aéronautique Internationale (FAI) world records for range and endurance.
- FAI sanctions all international aerospace records.
- Dragonfly was designed for the F5S record class: 5 Kg, electric, maximum surface area of 150 dm, surface loading of 12-50 g/dm, aircraft must be in sight the entire flight, must land and takeoff within 500 m of claimed spot, must be observed by FAI official and two additional observers.
- Lessons learned are to be applied to other industry/research projects.
- Students gain valuable hands-on training in UAV's.
- They are now working on a new project named Pterosoar, which is a collaboration between Oklahoma State University (2 students) and California State University at LA (4 students). The duration record attempt is next for the Pterosoar.

7. Rock On (Sounding Rocket) Workshop, Chris Koehler (Director, Colorado Space Grant Consortium) and Mary Sandy (Director, Virginia Space Grant Consortium)

- Rock on is a Sounding Rocket Payload Workshop organized by Colorado & Virginia Space Grant Consortia
- Date: June 22-27, 2008
- Place: NASA's Wallops Flight Facility
- Deadline for registration: 04/15/08
- Registration is open at: spacegrant.colorado.edu/rockon/

8. Starting Student Space Hardware Programs (StudentSat),
Chris Koehler, Colorado Space Grant Consortium

- 283 have participated at last 5 workshops (+4 from Headquarters)
- Next StudentSat workshop is planned for July 9-2, 2008
- Registration is open at: spacegrant.colorado.edu/studentsat/

9. Evening Presentations:

- Stephen Garber, Policy Analyst, NASA Headquarters History Division
- Nicole Herrmann (University of Maryland-College Park), NASA Headquarters History Division Intern (supported by the Maryland Space Grant Consortium)
- Amelia Lancaster (University of California-Davis), NASA Headquarters History Division Intern

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C. Council Meeting, Friday, February 29, 2008, AM and PM

1. Indiana Space Grant Consortium Midwest High-Altitude Launch Opportunity, Jason Krueger

- Jason Krueger is the President of StratoStar Systems LLC, based in Upland, IN
- StratoStar spun out of the INSGC-funded balloon program and has been in business for 2 years with a 100% payload retrieval record to date.
- StratoStar helps people who want to conduct launches and operate in near-space by selling equipment to conduct launches and providing training and launch services.
- Their support enables the students to focus on completing the learning cycle: study theory, do research, build the instrumentation, do the launch, carry out the operations, and do the data analysis.

2. High-Altitude Launch Opportunity (HALO) Network, Jason Krueger

- The HALO Network consists of a set of high-altitude balloons launched simultaneously to create a balloon-to-balloon network.
- HALO promotes public outreach and education by conducting multipoint science experiments, demonstrating an emergency communications system.
- 2007 HALO Project had the purpose to test StratoStar's cutting edge constellation mesh network (HALO Network). 5 of 8 balloons connected to create the mesh network constellation. They recorded temperature, pressure, humidity, and Geiger counter data. All payloads were recovered. The furthest link was over 270 miles.
- HALO II is planned to be launched around Sep-Oct 2008.
- The purpose of HALO II is to integrate high-altitude balloon launches into the classroom and curricula of undergraduate science and engineering courses around the country. No balloon experience needed. Looking for people to participate. Looking for Science experiments to fly.
- Balloon workshops will be given on May 21-22 and Aug 4-5, 2008. There is no cost to attend. Register at www.taylor.edu/cri/balloon.

3. Program Updates from NASA Headquarters, Diane DeTroye, National Space Grant Program Director, NASA

- Diane was able to generate the reports requested by OMB, which show that we contribute to the things we are expected to.
- Amy Kaminski, OMB Program Examiner, is a critical partner in the process of implementing the NASA Education Program; both the objective and the subjective views are taken into account.
- Joyce Winterton, Associate Administrator for Education, has two deputies: Bernice Altston and Jim Stofan.
- What's going on:
 - 50th anniversary – all year
 - Phoenix Mars Mission arrives – May 2008
 - Smithsonian Folklife Festival – Summer 2008
 - 4th Hubble Servicing Mission, Aug 2008, IMAX camera will be included
 - Lunar Reconnaissance Orbiter Launch, Oct 2008

- HQ was immersed in fulfilling the OMB's request in terms of PART (performance accountability rating tool) and APG (annual performance goals).
- There is a total of 15 PART measures and 6 APGs, but not all apply to Space Grant.
- Most of these data can be extracted from CMIS; the remaining data come from the longitudinal tracking tables.
- A specific call will be sent for the EPSCoR RID data shortly
- There will be a new Office of Education Database; it starts with the FY08 data; it will be employed for all NASA Education programs.
- An evaluation contractor will be brought on board; Space Grant and NASA EPSCoR will be among of the first tasks.
- 3rd party evaluation will start in 2008.
- There will be incremental funds as reviews are completed; the final budget call is pending.
- She asked for us to strive to provide succinct packages in the 2008 Budget.
- There should be an appropriate emphasis of investments among outcomes 1-2-3, taking into account that Space Grant is a higher education program; Thoughtfully consider whether and how you invest funds in K-12 student programs; Vertical integration is appropriate, but it has to be demonstrated.
- The 20th year evaluation is still happening, from FY03-FY07; should finish by June 30, 2008.
- The Affiliate survey will be done by emails; the deadline is March 17, 2008.
- Tennessee is the new NASA EPSCoR state.
- The Science Mission Directorate funded Chris Brown's EPSCoR proposal.
- The ongoing Student-led Flight Projects Survey is to gain understanding of the extent and impact of these efforts. The survey was due on Feb 22; 29 consortia completed, 6 additional have started; It will close on March 7. This survey is for informational purpose only, not for evaluation. She will send the final aggregated report.
- The five objectives of Space Grant are:
 - Establish and maintain a national network of universities.
 - Encourage cooperative programs among universities, aerospace industry, and Federal, state, and local governments.
 - Encourage interdisciplinary education, research, and public service programs related to aerospace.
 - Recruit and train U.S. citizens, especially women, underrepresented minorities, and persons with disabilities.
 - Promote a strong science, mathematics, and technology education base from elementary through secondary levels.
- The five top non-objectives of the survey are:
 - Workforce development
 - Scholarship/fellowship
 - CMIS categories
 - Inspire, engage, educate, employ
 - Develop research infrastructure
- The early stage of Space Grant was focused on growth. Space Grant is now more mature. So the focus now is on maintenance.

4. Exploration Systems Mission Directorate Space Grant Education Programs

- ESMD SG Student Manager-Teresa Parham (Acting)
- ESMD SG Faculty Manager-Rich Smith (Acting)
- ESMD Space Grant Projects Specialist- Susan Sawyer
- 2008 ESMD SG Faculty Cohort: 10 selected out of 34 applicants; All 10 summer faculty interns will be at regional meetings.
- Senior design course development:
 - Auburn University: Dr. Dan Beale and Dr. David Harris
 - Michigan Technological University: Dr. John Gershenson
- Summer Internships:
 - Total applications received: 103
 - Applications that met minimum requirements: 84
 - On March 14: SG will make offers to students
 - On March 20: need to know if the students accept or decline
- Fall Internships:
 - Application deadline: May 1, 2008
 - Process flowchart instructions on the KSC Education website
 - Consortia should let them know whether they will be funding students for NASA Internships through this site
- Systems Engineering Paper Competition
 - Students submit a Systems Engineering Paper
 - Judged by NASA judges
 - First prize: \$3500 scholarship and VIP Shuttle launch seating
 - Second prize: \$2500 scholarship and VIP Shuttle launch seating
 - Third prize: \$1500 scholarship and VIP Shuttle launch seating
 - Deadline: March 3, 2008
 - 13 teams have signed up as of Feb 28
 - The award ceremony is scheduled for mid April.
- Senior Design Project
 - 2007-2008: Select from NASA project list or submit a project
 - 2008-2009: Select from NASA project list only
- Mid-Term Status Report
 - Reporting thru Mar 30 2008
 - Due by April 14
 - NASA HQ will not release 2008-2009 ESMD funds until you have completed the status report showing adequate progress
 - 2006-2007 money may be used until Sep 30, 2008
 - 2007-2008 money may be used until Sep 30, 2009

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5. Dr. Yvonne Pendleton, Senior Advisor for Research and Analysis (SARA) speaking on the Science Mission Directorate Education Program

- Science Mission Directorate (SMD)
 - Alan Stern: Associate Administrator (AA)
 - Budget: \$5.4B/year
 - Programs: large earth science, heliophysics, planetary science, and astrophysics
 - 53 flight missions in operation.
 - 41 flight missions in development.
 - 3000+ active R&A grants.
 - These numbers exceed the combined efforts of all other space science programs world wide.
- FY08 SMD Education Portfolio
 - 296 education projects embedded in 56 SMD missions.
 - 15 competitively selected education projects. (selected in Nov 2007)
 - GLOBE
 - Total education project funding ~\$25M (total EPO budget ~50M)

6. NASA Mission Directorates break-out session:

- Science
- Exploration Systems
- Aeronautics Research
- Space Operations

7. Special Presentation on the Upcoming Hubble Servicing Mission, Frank Cepollina, Deputy Associate Director for the Hubble Space Telescope, NASA Goddard Space Flight Center

- Servicing Mission 4, 2008
- Crewed Exploration Vehicle support to HST deorbit via telerobotic operation of a free-flying robot
- The “grand questions” of astronomy may require large, complex optics that cannot be operated on the Earth’s surface.
- As was the case with Hubble, will astronauts be the key enabling capability to realize these goals? And with robotic partners?

8. Hubble Servicing Mission # 4 (SM4) Educational Planning, Diane DeTroye for Bonnie McClain

- The overall education plan is developed and co-led by the HQ Office of Education, (Debbie Gallaway) and Goddard Space Flight Center Education Office (Bonnie McClain).
- All Center Education Offices will incorporate SM4 content into education plans prior to, during, and following the mission.

- The Space Telescope Science Institute, under contract to GSFC Hubble Project, and via SMD Astrophysics Division, is collaborating with NASA Education in the development and implementation of education and outreach activities for SM4.
 - NASA Education in collaboration with IMAX is defining mutually beneficial SM4 and planning implementation of educational activities as an Educational Annex to the existing Space Act Agreement.
 - Spans an 18+ month timeline beginning approximately six months in advance of the launch with peak events occurring at the launch
 - Additional SM4 related events and activities will occur around the International Year of Astronomy in 2009.
 - Culminating events will include a grand celebration of Hubble's 20th anniversary in conjunction with debut of the SM4 IMAX Documentary in early 2010.
 - Initiatives
 - Professional development activities that increase knowledge and advance use of HST STEM information and data in classrooms and informal education environments
 - Student activities that connect students with every phase of the SM-4 mission and its results
 - A sequence of activities: pre-launch; during SM4; post-launch
 - Audiences
 - Faculty and students of higher education
 - Educators and students of K-12 Formal Education
 - Educational providers of Informal Education environments
9. NASA Experimental Program to Stimulate Competitive Research (EPSCoR) update
- Diane DeTroye, National Space Grant Program Director, NASA Headquarters
 - Reports on the Research Infrastructure Development grants are due 60 days before anniversary date.
 - They will give two years worth of funding with the renewal.
 - The yearly solicitation should follow the same cycle.
 - Bill Hiscock, Director, Montana Space Grant Consortium, indicated that the rest of the meeting is not appropriate for NASA employees.
 - Joe Danek
 - The target funding is \$20M, which represents a \$4.5M increase over last year.
 - This year, there is no "dear colleague" letter for Space Grant, only for NASA EPSCoR for strategic reasons.

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D. Council Meeting, Saturday, March 1, 2008

1. National Space Grant Foundation update, Mark Fischer, Executive Director

- The distinguished service award was postponed until the Fall 2008 Meeting in Atlanta to clarify the criteria by consulting the directors; respond via email by next Friday.
- Financial report:
 - The money from the unrestricted donations is divided according to policy; that's how the council received \$6K in its endowment account.
 - Expendable funds go to money market.
 - Endowment goes to index funds: moderate investment.
- NASA Education Associates Program (CA / Ames)
 - Student and Faculty Internship Program at NASA/Ames
 - Prime Contractor with Subcontract to CASG Foundation
 - Contact: Lisa Brown (PA) or Mike Wiskerchen (CA)
- Aerospace Education Services Project (PA / Langley)
 - Bringing NASA to K-12 Education
 - Subcontractor to Penn State to Implement Professional Development
 - Contact: Lisa Brown (PA)
- Develop Content Toolkits
 - AESP/NASA Determine Content Focus
 - Identification of High Quality Materials
 - Development of Materials to Fill Gaps
 - Participation of Content Experts
 - Aligned With National Standards
 - Toolkit Development Workshop
 - Packaged and Ready to Adapt to State Standards and Needs
- Mini-Grants
 - Provide Seed Funding To
 - Adapt Toolkits to State Standards and Needs
 - Integrate into Pre/In-Service Professional Development
 - Conduct First Year of Professional Development
- Professional Development Characteristics
 - In Depth Training
 - Multi-Day (≥ 30 hours)
 - Sustainable Models
 - Participants Receive Undergraduate/Graduate Credit
 - Face to Face and/or e-learning
- Virginia Aerospace Science and Technology Scholars (VA / Langley)
 - Interactive On-line and Residential Experience for High School Juniors at NASA/Langley
 - Modeled after Texas Aerospace Scholars at NASA/JSC
 - Contact: Mary Sandy (VA)
- International Electric Propulsion Conference (MI)
 - Meeting Registration, Payment Processing, Web Site, and Other Various Items
 - Contact: Bonnie Bryant (MI)

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- ESMD Student Paper Competition (KSC)
 - Administer NASA Funded Student Awards
 - Systems Engineering Workshop and Curriculum Development (TX / JSC)
 - Systems Engineering Curriculum Development and Implementation
 - Contact: Wally Fowler (TX)
 - Purpose: To disseminate an undergraduate systems engineering curriculum and discuss effectiveness of pilot systems engineering activities at UT Austin
 - Hosted by Johnson Space Center
 - Next one: August 11-12, 2008
 - Services that NSGF can provide to consortia:
 - Application system
 - Tracking system: overall response rate of 30%, approaching 100% more recently
 - Meeting registration system
 - Proposal submission and review system
 - Website redesign: VA, ND, DE
 - Website hosting
2. Langley Aerospace Scholars (LARSS) Program, Mary Sandy, VASGC
- Mary announced that the deadline for application to LARSS had been extended.
3. CubeSat Programs, Bill Hiscock, MTS GC
- NSF is offering grants to build and launch CubeSats
 - Topic is Space Weather
 - 3-6 awards per year
 - Deadline for proposals: May 28
 - Under GEOSCIENCES
4. Space Grant Regional Break-Out Sessions
- Upcoming Regional Meetings:
- Mid-Atlantic Region: Baltimore, MD, Johns Hopkins University, Mt. Washington Conference Center, Sep 7-10, 2008
 - Great Midwest Regional Meeting: Chicago, IL, Oct 2-3-4, 2008
 - Northeastern Region: Newport, RI: Sept 4-6, 2008
 - Southeast Region: Old San Juan, PR, January 12-15, 2009
 - Western Region: Grand Teton National Park, WI, Sep 25-27, 2008
5. 2009 Fall Meeting:
- Portland, Oregon, Oct 22-24, 2009
 - Hilton at downtown Portland
 - Oregon Museum of Science and Industry