

**National Council of Space Grant Directors Fall Meeting
Portland, Maine
October 14–16, 2010**

Minutes submitted by Ed Duke, Jan. 10, 2011

Thursday, October 14, 2010

1. Welcome – ***Terry Shehata***, Fall Meeting Host and Director, Maine Space Grant Consortium

2. Call to Order and Introductions – ***Chris Koehler***, National Council Chair and Director, Colorado Space Grant Consortium

- Koehler called the meeting to order at 1:09 pm
- He thanked the Maine Space Grant Consortium and acknowledged the District of Columbia Space Grant Consortium for the successful Spring Directors meeting in Washington, DC
- New Space Grant personnel and guests were introduced by the audience:
 - In North Dakota, Santhosh Seelan is the new Director (Paul Harderson stepping down).
 - Other consortia with new personnel or guests included: AK, AR, CO, IA, IN, KY, MN, MS, MT, OK, and PA.
 - NASA guest included: Madonna Adams (JSC), Brad Bailey (Ames Academy), Crystal Bassett (EPSCoR), Benita DeSuza (KSC), Diane DeTroye (NASA HQ), LaTeicia Durham (NASA HQ), Johnny Erickson (Lux Consulting Group), Mandi Falconer (ESMD), Kay Ferrari (JPL), Douglas Goforth (JSC), Diane Ingraham (KSC ESMD Higher Education Project), M. David Kankam (GRC), Aleksandra Korobov (NASA HQ), Mark Leon (ARC), Mona Miller MSFC), Gloria Murphy (KSC ESMD Higher Education Project), Katie Pruzan (NASA HQ), Frank Prochaska (JSC), Luis Rabelo (EPSCoR), Julie Robinson (JSC ISS Program), Linda Rodgers (JPL), Dave Rosage (GSFC), Frank Six (MSFC), Susan Stewart (Smart Global Solutions), Jim Stofan (NASA HQ), and Warfield Teague (EPSCoR).

3. Executive Committee Update – ***Chris Koehler***, Chair

- Chris Koehler reviewed the Executive Committee membership and summarized his personal goals as Chair.
- He reviewed ongoing activities of the Executive Committee. These include calls from the Chair to Directors, electronic newsletters, monthly Executive Committee teleconferences, and weekly teleconferences between the Chair and NASA Headquarters.
- The Committee held its annual Transition Meeting July 14–15, 2010, in Washington, DC.
- In addition, the Chair was invited to give a presentation to the NASA Office of Education Design Team on August 31, 2010. The Design Team also met with Suzanne Smith (Director of Kentucky Space Grant Consortium) in order to get the perspective of a state director who is new to the program. Koehler’s presentation focused on three questions that had been prescribed in advance by the Design Team: “What works in Space Grant?”; “What doesn’t work?”; and “How can Space Grant help NASA?” In preparation for his meeting, Koehler

solicited responses from all consortium directors. He distilled 33 such responses into his final presentation, which he summarized. He described the meeting with the Design Team as very productive and felt that it served to clear up many misconceptions that team members had held regarding the Space Grant program.

4. Secretary's Report – **Ed Duke**, Secretary and Director, South Dakota Space Grant Consortium

Minutes of the Spring 2010 (Washington, DC) Council Meeting were introduced and approved.

5. Treasurer's Report – **Peter Sukanek**, Treasurer and Director, Mississippi Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/25.pdf

Peter Sukanek summarized balances in the National Space Grant Foundation accounts as of July 31, 2010 (table, following page). Between Dec. 31, 2009, and June 30, 2010, the balance in the Endowment increased from \$6,240.56 to \$6,575.54, and between Dec. 31, 2009, and July 31, 2010, the balance in the Expendable account decreased from \$23,062.83 to \$21,505.49.

6. Nominating Committee Update – **Bill Garrard**, Committee Chair and Director, Minnesota Space Grant Consortium (see item 14, below, for results)

http://national.spacegrant.org/meetings/presentations/2010_Fall/13.pdf

Bill Garrard presented the Nominating Committee Report. He reviewed current membership and pending vacancies on the Nominating Committee, Executive Committee, Mission Directorates Working Groups, and Foundation Board. The only vote pending at the meeting was for one position on the Foundation Board.

7. NASA Education Updates – **Jim Stofan**, NASA Deputy Associate Administrator for Education

(presentation slides not available)

Stofan served as Acting Associate Administrator for Education from April to October 2010 when Leland Melvin was appointed Associate Administrator for Education. Stofan then resumed his position as Deputy Associate Administrator.

Stofan provided an overview of Administration-level education priorities and the role of NASA and Space Grant.

- Newly appointed Associate Administrator Leland Melvin has long been active in the Educator Astronaut program and more recently in the Office of Education Design Team and the Summer of Innovation pilot project.
- The Obama Administration emphasizes the theme “Educate to Innovate.” NASA’s response was the Summer of Innovation pilot project:
 - proposed funding at \$20M in FY2011 and FY2012 budgets

National Council of Space Grant Directors

Executive Committee

Chris Koehler, Chair, Colorado
 Chris Fritsen, Vice Chair, Nevada
 Bill Garrard, Past Chair, Minnesota
 Peter Sukanek, Treasurer, Mississippi
 Edward Duke, Secretary, South Dakota

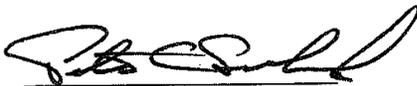
Barett Caldwell, Indiana
 John Gregory, Alabama
 Jeff Hoffman, Massachusetts
 Chris Brown, North Carolina
 Peter Schultz, Rhode Island

Treasurer's Report October 2010

ON DEPOSIT WITH NSGF

	ACTIVITY	PREVIOUS BALANCE (as of 31 Dec 09)	CURRENT AMOUNT
Endowment		\$6,240.56	
Income	Interest/Earnings		\$227.84
	Commissions		\$243.26
	Change in Market Value		(\$136.12)
Total Endowment (as of 30 Jun)			\$6,575.54
Expendable		\$23,062.83	
Income	Interest/Earnings		\$256.91
	Spring 2010 Meeting C. Koehler		(\$215.08)
	J. Bell		(\$659.77)
	Transition Meeting		(\$939.40)
Total Expendable (as of 31 Jul)			\$21,505.49

Respectfully Submitted,



Peter C. Sukanek
 Treasurer

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- project management will be awarded to a NASA Center through a competitive process
- 78,000 students participated in the summer of 2010
- project evaluation is being carefully scrutinized by OMB and GAO
- The One-Stop Shopping Initiative (OSSI) for NASA internship, fellowship, and scholarship opportunities is still being developed:
 - implementation will occur throughout the coming year
 - coordinated application procedure will help with longitudinal tracking of students across a variety of programs
- He summarized Space Grant contributions to the 2010 PART measures:
 - Space Grant comprises roughly one-third of the Office of Education budget
 - Space Grant exceeded all key targets in the PART measures (see also Diane DeTroye’s presentation, item 17, below)
 - Space Grant achieved almost all “passes,” with no “fails”
 - Space Grant had three “yellow” results (short of targets): number of precollege students, number of precollege teachers (in-service), and number of informal educators
- He previewed new Office of Education themes for 2011:
 - new NASA Strategic Plan scheduled for release around February 2011
 - Office of Education strategic framework (the education pyramid) will remain in place, but priorities and emphases may shift among Higher Education, Precollege Education, and Informal Education; specifically, the emphasis on Higher Education may decrease
 - both the House and Senate versions of the FY2012 NASA budget consider increased funding for Space Grant and EPSCoR, but no overall increase for the Office of Education; the result may be that Space Grant will be asked to conduct more programs focused at Precollege Education (e.g., projects such as Summer of Innovation, working with colleges of education)
- He discussed the Office of Education Design Team:
 - Administrator Bolden feels that NASA needs a more coordinated approach to education, similar to the systems engineering approach employed in the design of NASA’s technical missions
 - the Design Team is chaired by Trisha Pengra and Leland Melvin (new Associate Administrator for Education)
 - preliminary findings of the Design team include the following:
 - NASA has a highly constrained budget
 - the potential exists for strategic partnerships in education
 - it is important to use evaluation data to identify areas for improvement
- The new NASA Authorization Act specifies new projects aimed at providing student-led orbital projects (one for each state)
- He described the results of the President's Council of Advisors on Science and Technology (PCAST): among the recommendations are increasing the number of well trained teachers and linking students and teachers with authentic science experiences
- He summarized Department of Education data on student *interest in STEM* compared with *proficiency in STEM* at ninth and twelfth grade levels; Space Grant may be able to play a role by helping to capture interested students at an early stage and by providing teachers with tools to increase the proficiency of those students as they progress through high school
- Stofan concluded by stating that he is a firm believer in the potential of Space Grant

Question from the audience:

Q: Will there be changes in the NASA Educator Resource Centers (ERCs)?

A: The ERCs may be in line for better resources—probably mostly digital resources.

8. ISS Science Program and Opportunities for Space Grant – **Julie Robinson**, ISS Program Scientist

(presentation slides not available)

(Introduction by Diane DeTroye, National Space Grant Program Director)

Robinson provided an overview of research and education opportunities on the International Space Station (ISS) as the ISS transitions from the construction stage to utilization.

- ISS research objectives include:
 - NASA research goals
 - Research by international partners (Japan, Canada, European Space Agency, Russian Federation)
 - ISS National Laboratory (includes other federal agencies, universities, and commercial projects)
 - The NASA Authorization Act of 2010 extends operation of ISS through at least 2020
- Types of research projects underway:
 - physical sciences
 - life sciences (animal and plant studies)
 - human research
 - life support (regenerative processes)
 - space materials
 - SPHERES (see item 19, below)
 - earth and space science
- Education opportunities
 - NASA has goal of providing 900,000 students with “substantive” experience and millions of additional students with “some” experience related to ISS

9. NASA’s ELaNa (Educational Launch of Nanosatellite) Program and its First CubeSat Mission – Students **Ehson Mosleh** (MT), **Daniel Erb** (KY), and **Nicole Doyle** (CO) – sponsored by the Montana, Kentucky, and Colorado Space Grant Consortia

http://national.spacegrant.org/meetings/presentations/2010_Fall/19.pdf

Students from the Montana, Kentucky, and Colorado Space Grant Consortia described university-based CubeSat projects that are in progress and which will use NASA Kennedy Space Center Launch Services.

Montana (Ehson Mosleh)

- Explorer-1 [Prime] (E1P) is a commemorative re-flight of America’s first satellite (Explorer-1) launched in 1958; as with Explorer-1, E1P will study the Van Allen radiation belts and space weather, but in a CubeSat form

- Principal partners are the Space Science and Engineering Laboratory (Montana State University), Lockheed Martin, Space Dynamics Laboratory (Utah State University), Cal Poly, and NASA Kennedy Space Center Launch Services Program
- Since 2006, over 50 students have been involved in aspects of design, development, testing, and delivery
- E1P-1 (flight unit #1) has been delivered to Cal Poly and is scheduled for launch Feb. 25, 2011, on the ELaNa Mission; E1P-2 (flight unit #2) is undergoing testing and is scheduled for launch Oct. 25, 2011, as a secondary payload on the NPP Mission

Colorado (Nicole Doyle)

- The primary goal of the Hermes CubeSat mission is development of a generic bus that can be used in future missions; secondary goals include testing an S-band high-speed communication system and gathering environmental data
- Principal partners are University of Colorado (Boulder), Lockheed Martin, Cal Poly, and NASA Kennedy Space Center Launch Services Program
- About 50 students, mostly undergraduates, have been involved over the course of the project; students manage all aspects of the project including management, budgets, systems engineering, design, fabrication, and testing
- Scheduled for launch Feb. 22, 2011, on NASA's Glory Mission (Vandenberg Air Force Base)

Kentucky (Daniel Erb)

- KySat-1 combines design, fabrication, and testing experience for Kentucky Space Grant students with educational outreach opportunities for K–12 students and teachers
- It will be controllable from K–12 classrooms; it will provide features including audio playback, photo capture, and Morse code telemetry
- Ready to launch on the NASA Glory/ELaNa Mission in 2011

Question from the audience:

Q: How has this experience affected each of you?

A: Students replied that it gave them increased incentive and motivation, inspired them to go on to graduate school, and helped them to recruit new students into space-related studies.

10. Rockets in Wisconsin: WSGC Collegiate Rocket Competition and First Nations Launch – *Aileen Yingst*, Director, Wisconsin Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/18.pdf

Yingst discussed the background and evolution of collegiate rocketry programs sponsored by the Wisconsin Space Grant Consortium.

Collegiate Rocket Competition Background

- In 2004 WSGC adopted a strategy of using a rocket competition aimed at senior engineering students as a method to attract more students into aerospace
 - Teams were provided with a motor and accelerometer and a \$1000 budget

- Competition goals included (1) design, construction, and launch of rocket and payload; (2) acquiring and analyzing science data from flight; and (3) a written report and oral presentation
- Winning team received a cash prize as well as a presentation at Marshall Space Flight Center
- Initially, the program success was limited; surveys indicated that engineers “need a box to work in”

Current Structure

- In response to early disappointments, competition was changed to a more focused structure consisting of engineering challenges that change each year
 - Teams are provided with continuous mentoring at each step and experienced personnel
 - Competition was opened up to non-engineering teams
 - Cash prizes are awarded for the top three teams and for top non-engineering team
- The 2010–2011 program featured 13 teams representing five different affiliate members, a total of 54 students, and three non-engineering teams

First Nations Competition/Tribal College Rocket Consortium

- One student from the College of the Menominee Nation built the first Native American sounding rocket constructed on sustainable principles (rocket now in Smithsonian)
- This led to the establishment of the Tribal College Rocket Consortium
 - Focus is on AISES chapters (American Indian Science and Engineering Society)
 - Partial support from ESMD grant
 - First year included two workshops for faculty and students culminating in launch opportunity
 - Four colleges participated representing 14 tribes
- Next workshops Oct. 9–10 and Dec. 11–12, 2010, with oral presentations and launch tentatively scheduled for Apr. 29–30, 2011

11. NASA ESMD Lunabotics Competition and Montana Mule – *Jennifer Hane*, student sponsored by the Montana Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/11.pdf

(Introduction by Gloria Murphy, NASA KSC, ESMD Space Grant Education Project Manager)

Jennifer Hane, an undergraduate electrical engineering student at Montana State University, reported on the first NASA ESMD Lunabotics Mining Competition (May 27–28, 2010, at Kennedy Space Center).

- The Lunabotics competition was introduced to interested faculty in a NASA workshop on capstone experiences in June 2009
- Student teams were challenged to design and build a wireless-controlled robotic excavator
- 29 teams registered for the competition and 20 actually competed
- During the competition, the robot had 15 minutes to collect lunar regolith simulant and deposit it in a collector; a minimum of 10 kg was required to qualify, and the team collecting the most simulant was the winner

- The Montana MULE took first place, depositing 21.6 kg of regolith simulant (only team that successfully deposited more than 10 kg)
- The MULE team included eight students from four departments (Computer Science, Electrical Engineering, Mechanical Engineering, Metallurgical Engineering)
- Budget for the MSU MULE project was approximately \$16,200
 - \$4200 (materials and supplies)
 - \$8900 (travel)
 - \$2100 (shipping)
- In addition to the design and construction component, the competition included a systems engineering paper, outreach report, and optional activities

12. Providing Opportunities through Useful Intern Projects: An Industry Perspective – **Vito Moreno**, United Technologies Company, sponsored by the Connecticut Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/21.pdf

(Introduction by Saeid Moslehpour, Associate Director, Connecticut Space Grant Consortium)

Dr. Moreno described United Technology’s aerospace internship collaboration with the University of Hartford and the Connecticut Space Grant Consortium.

- United Technologies Company
 - Seven major subsidiaries
 - Major aerospace subsidiaries are Hamilton Sundstrand, Pratt and Whitney, and Sikorsky
- Internship Programs
 - Currently about 100 interns
 - Currently 12 interns through Space Grant collaboration; want to increase this number
 - Students work on clearly defined project with mentor
- Applications for NASA UTC Summer 2011 Aerospace Internship Program
 - Open to all Space Grant consortia
 - Space Grants provide \$5000 internship stipend for 10-week summer experience (plus recommended \$1000 travel allowance)
 - Connecticut Space Grant and UTC provide housing assistance and coordination with UTC mentors
 - Housing available at University of Hartford (\$45 per week)
 - Submit application to Connecticut Space Grant Consortium by Nov. 15, 2010

13. IronSat: Scientific Ballooning for Non-traditional Schools – **Mark Ford**, sponsored by the Maine Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/10.pdf

Teacher Mark Ford and four students described their balloon project experience.

- Ironwood is a small, non-traditional, residential high school in rural Maine

- Interest in ballooning stemmed from interactions with Terry Shehata and Jana Hall of Maine Space Grant
- Ironwood's non-traditional curriculum and flexible schedule were favorable for a balloon program
- Students were involved in design, construction, soldering, launch, and tracking

14. Election Results

Bill Garrard presented the results of Council Elections:

- Pat Hynes (New Mexico) was elected to the Foundation Board

Friday, October 15, 2010

15. National Space Grant Foundation Update – Wally Fowler , Director, Texas Space Grant Consortium and President of Foundation Board, and Mark Fischer , Executive Director

http://national.spacegrant.org/meetings/presentations/2010_Fall/12.pdf

Mark Fischer reviewed the purpose and composition of the NSGF and provided updates on recent activities.

- Mark Fischer serves as Executive Director, and the current Board of Directors consists of:
 - Wallace Fowler, President (TX)
 - Jack Higginbotham, Treasurer (OR) (outgoing)
 - Mike Wiskerchen, Secretary (CA)
 - Philippe H. Geubelle (IL)
 - Peter Sukanek (MS)
 - Pat Hynes (NM) (incoming)
- Shirley Campbell (retired from Oregon Space Grant Consortium) has joined as Assistant Executive Director
- The NSGF serves as an internal interface (among the various Space Grants), as an interface with other NASA programs (e.g., ESMD Space Grant programs, International Year of Astronomy), and as an external interface (e.g., Owen Software)
- The current NSGF profile includes:
 - small, geographically-distributed (TX, NM, FL, DC, OR)
 - 3.5 FTEs
 - 72 total contracts with 45 organizations
 - \$1.3 million in contracts
 - \$1.4 million in assets
 - 250 transactions per month
- New activities and milestones include the following:
 - AESP (Aerospace Education Services Project) Mini-Grants
 - Management of ESMD Space Grant Project
 - eXplorationHabitat (X-Hab) Academic Innovation Challenge
 - NASA Space Science Student Ambassadors Program (funded by NASA Science Mission Directorate)
 - goal is to have at least one ambassador in each state; currently 38 appointments in 34 states, with 18 pending

- New states in services program – 36 Total
- New website
- Several other pilot programs
- NSGF provides a variety of support services; currently 36 consortia use one or more of these services. Among these services are:
 - Application system
 - Fellowship and scholarship contracting
 - Longitudinal tracking system
 - Meeting/workshop registration
 - Proposal submission and review system
 - Website development, design, and hosting

16. Program Update – **Diane DeTroye**, National Space Grant Program Director (with assistance of **Katie Pruzan**, NASA/Valador, Inc., and **Frank Prochaska**, NASA JSC)

http://national.spacegrant.org/meetings/presentations/2010_Fall/29.pdf

Introductions and acknowledgements

- Introduced staff from the Space Grant, EPSCoR, and Steckler programs
- Acknowledged the support of Jim Stofan as Acting Associate Administrator for Education, who is returning to his position as Deputy Associate Administrator

2009 Data Reporting and PART Results

DeTroye summarized Space Grant data reporting for the 2009 program year (these data contribute to the 2010 PART* measures)

* Program Assessment Rating Tool

- PART 2010 Measures (2009 data)
 - The total number of participants in higher education reported was 20,648
 - The total number receiving significant investment reported was 4,024
 - The percentage of underrepresented participants was 29.36% (exceeded goal of 25.5%)
 - The percentage of female participants was 38.53% (slightly short of goal of 40%)
 - Three items were highlighted in yellow, indicating some need for improvement:
 - number of precollege students (124,813)
 - number of precollege teachers (in-service) (14,415)
 - number of informal educators (1,898)
- Affiliate types (2009)
 - She noted that the national network had grown—currently 987 total affiliates (652 academic and 335 non-academic)
- Affiliate classification (2009)
 - She provided data on affiliates serving underrepresented groups:
 - 40 Hispanic Serving Institutions
 - 48 Historically Black Colleges or Universities
 - 20 Other Minority Colleges/Universities
 - 23 Tribal Colleges or Universities
 - 9 Institutions serving primarily women

- 1 Academic institution for persons with disabilities
- Expenditure summary (2009, NASA plus match)
 - Total expenditures were \$76.6 million (includes base, Augmentation, CDC, and MSIPDC)
 - She noted that expenditures on Consortium Administration Costs (15.5%) and Indirect Costs (12.3%) were reasonable when matching funds were included
- Student data tables and longitudinal tracking
 - Cumulative results (2006–2009)
 - The total number of students being tracked is 4,696 (received “significant awards” and have “made next step”)
 - Current distribution is:

NASA/JPL	3%
Aerospace industry	10%
STEM industry	20%
STEM academia	11%
Pursuing advanced STEM degree	47%
Non-STEM	9%
 - Annual results (2006–2009)
 - Over the four years during which tracking has been conducted, the number of students “making the next step” increased from 374 (2006) to 2,255 (2009)
 - Space Grant contributions to PART measures – comparison of 2009 and 2010 reporting (2008 and 2009 data)
- In comparing 2008 and 2009 data, she noted the following:

	2008	2009
Percent employed by NASA, aerospace contractors, universities, and other educational institutions	52%	42%
	<i>(reduction of 154 students)</i>	
Percent of students moving to advanced education	44.6%	43.9%
	<i>(actually an increase of 511 students)</i>	
Number of underrepresented students in higher education programs	4,588	3,884*
	<i>(reduction of 704 students)</i>	
(Non-PART Measure): Number of female students in higher education programs	6,066	5,096*
	<i>(reduction of 970 students)</i>	
Number of institutions served in EPSCoR states	199	234
Ratio of funds leveraged by NASA funding support	80%	83%
Number of new or revised courses developed with NASA support	147	179

* She expressed concern about the decreases in underrepresented students and female students

2008 Minority-Serving Institution Partnership Development Competition (MSIPDC) Results and Findings

- Purpose
 - Develop strong, meaningful, and sustainable collaborations with minority-serving institutions (MSIs)
- Award results
 - Colorado, Illinois, Maryland, Montana, New Mexico, New York, and Wisconsin received awards
 - Total funds awarded were \$1,388,742
 - 160 direct college student participants:
 - underrepresented minority students: 100
 - female students: 56
 - 82 students directly funded:
 - underrepresented minority students: 54
 - female students: 34
 - 5 new courses
 - 2 revised courses
 - Three of the seven awarded consortia successfully added new MSI affiliates, with 8 new MSI affiliates total

2009 Consortium Development Competition (CDC) Results and Findings

- Purpose
 - promote greater involvement of consortium affiliates
 - focus on higher education (NASA Office of Education Outcome 1)
 - increase numbers of students in the STEM pipeline
 - provide meaningful, hands-on experiences for participants
 - increase the number and diversity of students, faculty and researchers from underrepresented groups (minorities and women)
 - develop partnerships with community colleges and/or minority-serving institutions
- Award results
 - Maine, Nevada, South Carolina, South Dakota, and Vermont received awards
 - Total funds awarded were \$1,705,030
 - 131 direct college student participants:
 - underrepresented minority students: 12
 - female students: 38
 - 117 students directly funded:
 - underrepresented minority students: 9
 - female students: 33
 - new affiliates: 0
 - 4 new courses
 - 5 revised courses

Opportunities for 2011

- 2011 MUREP (Minority University Research and Education Program) projects (through an omnibus- or ROSES-type solicitation) in the following focus areas:

- Curriculum Improvement Partnership Awards for the Integration of Research (CIPAIR)
- NASA Science and Technology Institute for Minority Institutions (NSTI-MI)
- Innovations in Global Climate Change Education (IGCCE)
- MUREP Small Projects umbrella: Transformational Performance in STEM Using Innovative Solutions
- EPSCoR Research (announcement pending)
- Four projects with details to be determined:
 - Summer of Innovation
 - Innovations in STEM Higher Education (flight projects related)
 - K-12 Opportunity
 - Informal Education Opportunity
- Space Grant Microgravity Week – “Grant Us Space”
 - Doug Goforth (NASA JSC) is point of contact
 - Announcement in mid-November 2010
 - Letter of intent due mid-January 2011
 - Proposals due February 2, 2011
 - Selections announced in mid-March 2011
 - Targeting July 7-16, 2011, for the flight week activities
 - Flight team slots allocated regionally:
 - Western: 5
 - Southeast: 3
 - Great Midwest: 2
 - Mid-Atlantic: 2
 - Northeast: 2
 - Proposals must show direct tie to current NASA research
 - Strongly encourage participation by MSIs, new institutions, and community colleges

Recent Award Updates

- 2010 Consortium Development Competition (CDC)
 - Maine, New Jersey, Nevada, South Carolina, South Dakota, and Vermont received awards
- CubeSat Launch Initiative
 - 16 proposals submitted, 12 selected
 - 7 awardees with Space Grant connections:
 - Alabama, Alaska, Michigan (2), Montana, New York, and Vermont
 - Second announcement released; submissions due Nov. 15, 2010
- Summer of Innovation Capacity Building Awards (\$50,000 awards)
 - 16 selections, 5 with facilitated involvement from Space Grant:
 - Georgia (2), Nebraska, New Mexico, and Virginia
- K-12 Competitive Awards
 - 8 selected, 2 with Space Grant as lead institution or facilitated involvement:
 - Maine and North Carolina

Overall 2010 Summer of Innovation Pilot (Katie Pruzan)

Thirty-one Space Grant consortia submitted proposals and the following four received awards:

Idaho, Massachusetts, New Mexico, and Wyoming

Pruzan reviewed the program objectives:

1. Professional development and training opportunities for teachers who will lead students through the *Summer of Innovation* summer learning program
2. An intensive and interactive middle school education experience that accelerates student learning and improves student STEM skills and knowledge
3. Strategic infusion of NASA content and educational resource materials
4. A community of STEM education stakeholders that is able to sustain student interest and achievement
5. Assessments of effectiveness of *Summer of Innovation* interventions and the effectiveness of the STEM learning communities developed through this pilot

She then provided a summary of current and planned activities:

- Current activities
 - Data collection in Office of Education Performance Management (OEPM) System from all sites
 - Follow-up meeting with OMB on Sept. 27, 2010
 - Local and third party evaluations underway
 - Best Practices Benchmarking Study
 - Pilot Project Lessons Learned Assessment
 - Development of Key Performance Indicators and Metrics
 - Announcement of Opportunity for Partnerships
- Planned activities
 - All-Hands Lessons Learned Session: Sept. 21–23 at NASA HQ
 - USA Science and Engineering Festival: Oct. 23–24, National Mall
 - Education Partnership Summit: Oct. 30–Nov. 1, Orlando, FL
 - SoI will be presented at the National Summer Learning Association (NSLA) Conference: Nov. 9, Indianapolis, IN

She concluded with a discussion of challenges and lessons learned:

- Major challenges
 - Late start impacted overall implementation and ability to reach participant goals
 - Working through issues with third party evaluation and OEPM system
- Preliminary lessons learned
 - Partnerships and collaborations at all levels are key to project success
 - Initial evaluation strategy was too ambitious
 - More resources required for project evaluation
 - Single implementation strategy will not serve all populations and locations
 - Clearer requirements and expectations in solicitation documents
 - Plan sufficient time for solicitations and project implementation

Steckler Update (Frank Prochaska)

Prochaska provided an update on the NASA Ralph Steckler Space Grant Colonization Research and Technology Development Opportunity.

Awards granted in three phases:

- Phase I
 - Awards not to exceed \$70,000 for 9 months
 - 18 awards granted in January 2010
 - Phase I Forum Nov. 15–17 at South Shore Harbour Resort & Conference Center in League City, TX
- Phase II (announcement coming soon)
 - 5 awards not to exceed \$250,000 for 2 years
- Phase III
 - 2 awards not to exceed \$275,000 for 2 years

Questions from the audience:

Q: What will be the platform for the “Grant Us Space” microgravity project?

A: NASA JSC Boeing 727. (DeTroye)

Q: For clarification, were the numbers of flights for “Grant Us Space” based on states or regions?

A: Those were for each region as a whole; the total number of flights is 14. (DeTroye)

Q: Will the objectives for the 2011 Summer of Innovation project be the same as those for 2010?

A: That will be based on results of the evaluations that are currently in progress. (Pruzan)

Q: Who will be eligible to submit to the 2011 Summer of Innovation project?

A: That will be specified in the new solicitation which should be issued by the end of the year. (Pruzan)

Q: Will the 2011 Summer of Innovation projects be channeled through Space Grant again?

A: The eligibility guidelines are still being discussed. (Pruzan)

Q: The longitudinal tracking data that were presented seem to show good results in the area of workforce development. Do you foresee a significant change in focus in the near future?

A: There will be some changes in the focus of the Space Grant program in the near future. At this point the details are uncertain. (DeTroye)

Q: Regarding the pie chart shown, are science and math teachers in the non-STEM category?

A: Science and math teachers are included in STEM employment. (DeTroye)

17. National Space Grant Student Satellite Program Update – Luke Flynn , Director, Hawaii Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/14.pdf

Flynn provided an update on the National Space Grant Student Satellite Program (NSGSSP) and discussed how NSGSSP can address US space program priorities. The Steering Committee for NSGSSP includes Mike Drake (AZ), Chris Koehler (CO), Alec Gallimore (MI), and Luke Flynn (HI).

- Status of US Space and Satellite Program (showed data from unclassified US National Reconnaissance Office report)
 - Over 40 countries now have space programs
 - US share of world satellite market dropped from 68% (1998) to 29% (2008)

- World demand for satellites is strong
- Seven countries or consortia have active launch programs
- US share of satellite launches dropped from 40% (1998) to 23% (2008)
- Reducing satellite launch costs is key to expanding the US commercial market
- There is increasing interest in small satellites for several reasons:
 - Cost
 - Current satellite and launch cost for “big” satellite = \$1B
 - Current small satellite and launch cost ~ \$140M
 - Low-cost satellites and launch vehicles needed
 - Rapid development and assembly
 - Rapid response for disaster management, on-orbit asset replacement
 - Several agencies, including NASA’s Office of the Chief Technologist (OCT), are accelerating programs focused on small satellites
 - OCT appears to be less risk-averse and less paper-intensive compared with most NASA recent programs
 - OCT has specified interest in small satellite development—will probably be centered at NASA Ames
- Where does NSGSSP fit in?
 - 44 Space Grants report small satellite programs
 - student projects may be comparatively rapid—build schedules of one or two years
 - cited examples in Hawaii Space Grant Consortium including CubeSats, CanSats, rocketry, and HawaiiSat-1 (an 80-kg SmallSat in progress)
 - Space Grant projects can work together to develop common CubeSat components
 - these can include common platforms, kits, and support elements
 - cited example of Hawaii’s Comprehensive Open-architecture Space Mission Operations System (COSMOS)
 - discussed NASA Ames rideshare configurations for small satellites
 - suggested that in the future a 3-u CubeSat (5-6 kg, 3,000 cm³) could be built and launched within the budget and timeframe of a NASA EPSCoR Research award
- Summary and Issues
 - Concluded that collaboration between Space Grant and the new Office of the Chief Technologist may prove beneficial for small satellite development
 - Some issues remain in terms of intellectual property, communication, and reporting requirements

18. NASA Student Solar Spectrograph Competition – **Randy Larimer**, Deputy Director, Montana Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/7.pdf

Larimer described opportunities to participate in a student competition to design and build a solar spectrograph for the IRIS mission.

- IRIS (Interface Region Solar Spectrograph) is a Small Explorer Mission under development which will study the solar atmosphere, especially the transition region and chromosphere

- Principal partners are: Lockheed Martin Solar and Astrophysics Laboratory, Lockheed Martin Sensing and Exploration Systems, NASA Ames Research Center, Montana State University, Smithsonian Astrophysical Observatory, and Stanford University
- MSGC is managing Education and Public Outreach (E/PO) for the IRIS solar spectrograph
- Competition goals
 - Competition is targeted at National Space Grant network
 - Student teams design, build, and demonstrate a working solar spectrograph
 - Priority will be given to MSIs and institutions with limited aerospace activity
- Pilot competition is underway with teams from Montana State University and Salish Kootenai College
- Full competitions will take place in 2011–2012 and 2012–2013
 - For 2011–2012 Competition
 - Applications available Feb. 1, 2011
 - Applications due Apr. 30, 2011
- Details at: <http://www.spacegrant.montana.edu/iris.html/>
or contact Randy Larimer at: rlarimer@ece.montana.edu

19. SPHERES Update – **Jeffrey Hoffman**, Director, Massachusetts Space Grant Consortium

(presentation slides not available)

Hoffman provided an update on the SPHERES program.

- Three mini-satellites are currently in zero-G on the International Space Station. ZERO Robotics and SPHERES are programs open to High School students and Undergraduates. The program currently involves NASA, DARPA, MIT, and industry partners.
- Current activities include programming of the SPHERES robots by High School students; involvement of Middle School students may increase.
- SPHERES activities were included in the Massachusetts 2010 Summer of Innovation Pilot program.
- The program is moving toward an annual competition format and eventually may transition to a private organization similar to FIRST Robotics.

20. Rhode Island School of Design's Efforts for the Moonbuggy – **Peter Schultz**, Director, Rhode Island Space Grant Consortium, and **Michael Lye**, Rhode Island School of Design

http://national.spacegrant.org/meetings/presentations/2010_Fall/2.pdf

Michael Lye described collaborations between Rhode Island School of Design and Brown University including the Great Moonbuggy Race (April 10, 2010, at Marshall Space Flight Center).

- Rhode Island School of Design students have completed about 25 NASA internships over the years, primarily at Johnson Space Center, in the area of human factors and space habitat design.
- The RISD/Brown Moonbuggy placed third in the 2010 Great Moonbuggy Race at MSFC.

21. Summer of Innovation Updates

Massachusetts Space Grant Consortium – **Raji Patel**, Co-Director, Massachusetts Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/8.pdf

Patel described activities and outcomes of the 2010 Summer of Innovation Pilot program in Massachusetts. The program targeted students and teachers in the Boston area.

- Partners included University of Massachusetts Medical Center, Tufts University/Challenger Center, Edgerton Center, Worcester Polytech, and MIT.
- Activities included building Lego robots, lunar habitats, rockets, telescopes, medical issues in space, and ZERO Robotics.
- Preliminary data show 127 student and 842 teacher participants, exceeding both targets.
- Data on student demographics show 55% female, 70% non-white, and 85% low-income.
- Based on the SoI pilot, the Boston Public School system has requested teacher workshops October 2010 through March 2011.
- Two programs developed for the pilot may be marketable, and kits are being developed.
- Collaboration with Lego has developed in order to provide more robotics kits and training to teachers.

Idaho Space Grant Consortium – **Aaron Thomas**, Director, Idaho Space Grant Consortium, and **Ed Galindo**, Associate Director, Idaho Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/6.pdf

Thomas and Galindo described activities and outcomes of the 2010 Summer of Innovation Pilot program in Idaho, which featured collaboration with Montana and Utah.

- Week-long student and teacher experiences at 11 locations in Idaho, Montana, and Utah
- 1,067 mile road show!
- Traveling teams of teachers, undergraduate and graduate students, professors, and education professionals
- Workshop locations were on or near Tribal reservations or in areas with high Hispanic populations
- Activities included: teacher workshops; rocketry; robotics; a session on plants, nutrition, and physical activity; cosmology; aeronautics; hot-air balloons; planets; and geology
- Communities received the program with great enthusiasm and are looking forward to the return of the program next year

New Mexico Space Grant Consortium – **Judy McShannon**, Associate Director, New Mexico Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/20.pdf

McShannon described activities and outcomes of the 2010 Summer of Innovation Pilot program in New Mexico, which featured collaboration with Texas, Colorado, Arizona, and Maine.

- Participating teachers attended a one-week summer workshop at New Mexico State University
- Teachers then held a 3-4 week summer camp at their home location
- Participants: 138 teachers; over 2,000 students; 38 school districts; and five states (New Mexico, Texas, Colorado, Arizona, Maine)
- Four student competitions
 - Experiment competition (selected experiments will be flown on sounding rocket)
 - 26 experiment winners
 - Patch competition
 - Video competition
 - Essay competition
- Student experiments will launch on sounding rocket from Spaceport America (scheduled for April 1, 2011)

Wyoming Space Grant Consortium – **Amber Ash**, 21st Century Community Learning Centers (presentation slides not available)

Ash described activities and outcomes of the 2010 Summer of Innovation Pilot program in Wyoming. The Wyoming program focused on linking STEM education and wind energy.

Questions for the Summer of Innovation presenters:

Q: What percentage of the budget went toward evaluation?

A: Generally about 10% went toward evaluation. Some programs were able to use existing evaluation systems in their state Department of Education. Evaluation was challenging because of the nature of the student populations.

Q: How would you compare the SoI summer activities with other Space Grant summer programs?

A: It was very different. There was a much greater focus on direct K–12 participants. (McShannon)

22. Space Grant Internship Workgroup Update – **Barrett Caldwell**, Workgroup Chair and Director, Indiana Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/15.pdf

Caldwell introduced Frank Prochaska (NASA JSC), who gave an update on SOLAR (Student On-Line Application for Recruiting interns, fellows, and scholars)

- SOLAR is the product of the NASA Education One Stop Shopping Initiative (OSSI) for internship, fellowship, and scholarship opportunities
- URL is <http://intern.nasa.gov>
- Using SOLAR, a student will complete a single internship and/or fellowship application to express interest in up to 15 specific opportunities for each summer, fall, spring or year-long session
- SOLAR will be available starting on Nov. 1, 2010, for the summer 2011 session
 - Submit application for summer 2011: 11/1/2010 – 2/1/2011
 - Submit application for fall 2011: 2/2/2011 – 5/1/2011

- NASA is using a phased approach for the internship, fellowship and scholarship opportunities to be available through SOLAR
 - Eventually, all NASA Centers will be using SOLAR to select students for undergraduate and graduate programs
 - During the phased implementation, there may be additional opportunities available at the Centers that have not been included in SOLAR (e.g., NASA Academies)

Comment from Diane DeTroye: This is the system that we have been waiting for! The developers are still working on functionality that will allow Space Grant staff to view and endorse applications that involve Space Grant co-funding.

Comment from Mark Fischer: It is important that Space Grant staff provide feedback to the SOLAR development team.

23. 2011 NASA Academies

http://national.spacegrant.org/meetings/presentations/2010_Fall/26.pdf

Glenn Research Center – **David Kankam**, University Affairs Officer, NASA Glenn Research Center

- Glenn 2010 NASA Space Academy hosted eight students with representation of seven Space Grant partners
 - Group project: Modular and Adaptable Space Environments (MASE)
- NASA Aeronautics Research Mission Directorate (ARMD) has approved a new NASA Aeronautics Academy to begin summer 2011

Additional opportunities at Glenn Research Center:

- NASA Glenn Faculty Fellowship Program (NGFFP)
 - Application and details at <http://newbusiness.grc.nasa.gov/university-affairs/ngffp/>
- **NASA Space Technology Research Grants Program**
 - Objective: New program to accelerate development of high-risk/high-payoff technologies in support of NASA’s space science and exploration needs
 - Faculty Grants: Focus on advanced space technology by academia, NASA Centers, not-for-profit R&D labs, small business, industry, and other government agencies
 - **100 new awards/year**; 12 months, \$250K award (max. 24 months, \$400K)
 - 1 solicitation/year, for Dec. NRA release
 - Student Fellowships:
 - Award for MS: \$55K/year for 2 years; PhD: \$60K/year for 3 years
 - **Total awards: 350 in FY11; 500/FY after FY11**
 - Proposal call: 10/1/2010; Due date: 12/1/2010; awards announced 2/15/2011; Fellowships begin 8/15/2011
 - Details at <http://www.nasa.gov/oct>
 - Application at <http://nspires.nasaprs.com/external/research.do>

Ames Research Center – **Brad Bailey**, NASA Ames Research Center

- Ames 2010 NASA Academy hosted 11 US students and 3 international students
 - Group project: Creation of a microbial fuel cell as a proxy for life detection
- 6/12 students from 2009 Academy returned to Ames during the summer of 2010
- 5 students from 2010 Academy already accepted for summer 2011 and 3 students are currently working at Ames as a continuation of their summer projects
- Plans are in place with Stanford University to use Ames Academy as an entrance requirement

Marshall Space Flight Center – **Frank Six**, University Affairs Officer, NASA Marshall Space Flight Center

- Marshall held six separate Academy programs in 2010

Goddard Space Flight Center – **Johnny Erickson**, Lux Consulting Group, Inc.

- His group helped develop the Academy application system
- URL is <http://www.AcademyApp.com>
- Academy applications are not yet in SOLAR (until 2012 application period)

24. Extreme Environments Habitat Senior Design Course and Faculty Workshop – **Laura Ikuma**, Louisiana State University

http://national.spacegrant.org/meetings/presentations/2010_Fall/16.pdf

(Introduction by Gloria Murphy, NASA KSC, ESMD Space Grant Education Project Manager)

Ikuma discussed the most recent ESMD senior design course that is under development at LSU.

- Goal is to apply systems design, human factors, and other engineering skills and tools to address a specific design problem in extreme environment habitat design.
- Currently being taught as a two-semester senior design (capstone) course at LSU
 - Team-taught by three faculty
 - 21 students: mostly industrial engineering, also biological engineering, mechanical engineering, and construction management
 - Main course topics are: space operations, systems engineering design, habitat requirements, and habitat design
 - Five student-generated projects: radiation reduction, sleep environment, modular habitat design, lunar dust dilemma, and bio-regenerative life-support systems
- Future workshop for interested faculty in July 2011 at NASA Kennedy Space Center (travel and expenses paid by NASA)
 - Plan to implement course in other universities in Fall 2011

25. Solar System Education Program Opportunities – **Kaye Ferrari**, NASA JPL, Director of Solar System Ambassador Program (Sponsored by Minnesota Space Grant Consortium)

(presentation slides not available)

(Introduction by Terry Flower, Minnesota Space Grant Consortium)

Ferrari summarized volunteer programs focused on solar system education:

- Solar System Ambassadors (direct student participation)

- Solar System Educator Program (teacher workshops)
- Consortium for NASA Volunteers
- Year of the Solar System – will celebrate a number of solar system mission milestones over a 23-month period

A new website will be available in November 2010: <https://nnw.jpl.nasa.gov/>
 Or contact Ferrari at: Kay.A.Ferrari@jpl.nasa.gov

26. Spring 2011 National Meeting – **Richard Berendzen**, Director, District of Columbia Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/17.pdf

The Spring 2011 Directors Meeting will be at the Sheraton Crystal City Hotel, Arlington, VA, Mar. 3–5, 2011.

27. Fall 2011 National Meeting – **Aileen Yingst**, Director, Wisconsin Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/27.pdf

The Fall 2011 Directors Meeting will be at the KI Center and Hotel Sierra in Green Bay, WI, Sept. 21-23, 2011. (Those dates are Wednesday through Friday.)

28. Building and Fostering Partnerships to Increase Participation and Diversity in STEM – **Ashanti Johnson**, Institute for Broadening Participation (Sponsored by Maine Space Grant Consortium)

http://national.spacegrant.org/meetings/presentations/2010_Fall/23.pdf

The Institute for Broadening Participation is one of four Broker Facilitators selected by NASA to assist with implementation of the new One-Stop Shopping Initiative (OSSI) and to increase diversity among applicants to NASA student opportunities.

- The new OSSI Launchpad is at <http://intern.nasa.gov>
- Part of OSSI is SOLAR (Student On-Line Application for Recruiting interns and fellows)
- She discussed SOLAR’s functionality for students and mentors
- The Broker Facilitator Corps (BFCs) working on recruitment are targeting:
 - Primarily White Institutions (PWIs) – IBP
 - HBCUs – UNCF (United Negro College Fund) Special Programs
 - HSIs – Hispanic College Fund
 - TCUs – American Indian Higher Education Consortium
- IBP’s role in OSSI includes
 - Increasing the number and diversity of applicants from PWIs
 - Assisting students in navigating SOLAR and completing their applications
 - Tracking NASA internship/fellowship recipients as they progress through their educational pathway
 - Increasing awareness of NASA education resources and OSSI/SOLAR among PWI faculty, staff, and administrators

29. Connecticut Space Grant Helicopter Program – *Al Gates*, Central Connecticut State University (Sponsored by Connecticut Space Grant Consortium)

http://national.spacegrant.org/meetings/presentations/2010_Fall/4.pdf

Gates summarized the 2010 Helicopter Program and provided information on the 2011 program.

- Classroom instruction includes principles of helicopter flight, aerodynamics, wind tunnel testing, control theory and design and building of VTOL RC aircraft and helicopters, and UAV design and operation
- Hands-on activities include a helicopter flight, wind tunnel testing of intermeshing UAV helicopter, static test of intermeshing UAV helicopter, human power helicopter rotor blade testing, and building of VTOL aircraft
- Students fly remote control helicopters and airplanes and flight simulators
- Students program a UAV to fly and experiment with UAV flight
- Tours and observations include KAMAN Aerospace, Sikorsky Aircraft, New England Air Museum, VIP tour of helicopters, UAV helicopter flight, and RC helicopter flight
- Dates for 2011 are: June 19–26, 2011 at Central Connecticut State University, Hartford, CT
- Cost: \$500 (Early Bird Special)
- Information available at Connecticut Space Grant web site: www.ctspacegrant.org

30. Integration of Design and Hands-on Learning into STEM Curriculum – *Fathi Finaish*, Director, Missouri Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2010_Fall/9.pdf

Finaish gave an update on the workshop held June 17–19, 2010, at Missouri University of Science and Technology in Rolla, MO.

- The workshop used teaching of aerodynamic principles and building of a radio-controlled aircraft model to illustrate methods of integrating hands-on learning into engineering curriculum.
- Several specific ABET (Accreditation Board for Engineering and Technology) outcomes were emphasized:
 - (a) ability to apply knowledge of mathematics, science, and engineering,
 - (c) ability to design a system, component, or process to meet desired needs,
 - (e) ability to identify, formulate, and solve problems,
 - (g) ability to communicate effectively, and
 - (k) ability to use the techniques, skills, and modern tools necessary for engineering practice
- The workshop was designed to assist both faculty and administrators from institutions that are seeking to emphasize and integrate hands-on training and implementation of system design, simulation, building, and testing.
- Details of workshop assessments and recommendations were presented.

31. Space Grant and FIRST: How Can We Partner Nationally? – **Barrett Caldwell**, Director, Indiana Space Grant Consortium

(presentation slides not available)

Caldwell described collaboration between Indiana Space Grant and FIRST Robotics.

- ISGC undergraduate students mentor FIRST K–12 teams under a Higher Education project
- STEM undergraduates gain service learning experience
- He discussed regional FIRST competitions in Indiana

32. Announcements

David Kankam, University Affairs Officer, NASA Glenn Research Center, reminded the audience about the new NASA Space Technology Research Grants Program, which is driven by the Office of the Chief Technologist (see item 23, above). For FY2011 there will be 100 Faculty grants and 350 Student Fellowships (increasing to 500/year in subsequent years).

Philippe Geubelle, Director, Illinois Space Grant Consortium, announced the upcoming SEDS (Students for the Exploration and Development of Space) conference Nov. 5–7, 2010 at the University of Illinois.

Chris Koehler, Director, Colorado Space Grant Consortium, announced the Colorado Robotics Challenge Apr. 2, 2011, in Great Sand Dunes National Park, CO.

<http://spacegrant.colorado.edu/index.php/robotics-challenge>

Koehler also announced RockOn 2011, June 18–23, 2011, at Wallops Flight Facility, Wallops Island, VA.

http://spacegrant.colorado.edu/rockon/2010/2010_travel_info.html

Saturday, October 16, 2010

33. Pathevo 2.0 Demonstration and Update – **Janice Riley** and **Yahia Amehraye**, Owen Software (Sponsored by Maryland Space Grant Consortium)

http://national.spacegrant.org/meetings/presentations/2010_Fall/1.pdf

Pathevo™ is an online tool that allows individuals to assess their skills and identify potential career paths, explore options for education and employment, and create a plan to help them realize their dreams.

- Riley and Amehraye gave a demonstration of several Pathevo functions.
- Currently 18 Space Grant consortia are using Pathevo in some capacity.

34. Mission Directorate Working Group Chair Reports

Co-Chairs

Exploration Systems Mission Directorate:	Wally Fowler (Texas SGC) Raji Patel (Massachusetts SGC)
Science Mission Directorate:	Terry Teays (Maryland SGC) Mitch Colgan (South Carolina SGC)
Aeronautics Research Mission Directorate:	Scott Terry (Nebraska SGC) Stephen Ruffin (Georgia SGC)
Space Operations Mission Directorate:	Jeff Hoffman (Massachusetts SGC) Tom Filburn (Connecticut SGC)

Space Operations Mission Directorate

Jeff Hoffman presented the summary.

- The group discussed the importance of gaining access to space.
- Increasing opportunities were noted in microgravity, balloon flights, and CubeSats.
- Future non-NASA space access was discussed.
- Much of the discussion focused on access to the International Space Station; management of research operations is expected to be contracted to a non-profit organization in the near future.
- There is a need for a more expedient process to get non-NASA experiments approved and deployed on ISS.

Science Mission Directorate

Terry Teays presented the summary.

- The group has been seeking out opportunities to get students and faculty involved in SMD missions (similar to the ESMD Space Grant programs).
- Plans are in place for a pilot program in summer 2011 that will target missions that are not based at NASA Centers (e.g., Hubble, Chandra, James Webb) or link with the astrobiology or lunar science institutes.
- There was discussion of eventually formalizing such opportunities and promoting them through the OSSI system.

Exploration Systems Mission Directorate

http://national.spacegrant.org/meetings/presentations/2010_Fall/5.pdf

Wally Fowler and Raji Patel presented the summary.

- The group was joined by Gloria Murphy and other NASA ESMD Space Grant program staff.
- They summarized the current ESMD Space Grant program:
 - Six general areas for participation
 - 3737 students to date
 - \$5.5 million NASA ESMD investment to date
- Future activities and trends were discussed:
 - Work with ESMD to improve faculty program processes
 - Re-create program like NASA/ASEE (American Society for Engineering Education) Summer Faculty Program (research focus)
 - They noted that the number of interns had been decreasing in recent years

- They discussed the possibility of partnering with the Space Grant RockOn launch program
- Fowler described the UTeach*Engineering* project which aims to introduce more science and engineering principles into K–12 teacher training.
<http://www.uteachengineering.org/>

Aeronautics Research Mission Directorate

Scott Tarry presented the summary.

- The group was joined by David Kankam from NASA GRC.
- The group will work with Kankam to promote the new Glenn Aeronautics Academy.
- It is possible that graduates of the Aeronautics Academy will give a presentation at a future Council meeting.

35. Consortium Coordination Session – NASA Headquarters, Directors, and Coordinators:
Diane DeTroye (NASA HQ) and *Katie Pruzan* (NASA/Valador, Inc.)

(presentation slides not posted to web, but slides were sent via e-mail from DeTroye to directors and coordinators on Oct. 18, 2010)

Pruzan reviewed problems and trends in data reporting for the 2009 program year.

- 2009 Data Reporting and PART Results – Error Analysis and Interpretation
 - Student Data Tables
 - Discussed inconsistencies in Table B – Longitudinal tracking
 - Numbers of male and female students not consistent with total number of students
 - Numbers of undergraduate and graduate students not consistent with total number of students
 - Action: Requested that consortia check all numbers in Table B – Longitudinal Tracking and submit corrections by Oct. 29, 2010
 - Expenditure Data
 - Discussed problems with Expenditure Summary Excel Data and Pie Chart
 - Some consortia showed a distribution of expenditures that was inconsistent with overall Space Grant expenditures and did not seem to be appropriate with respect to overall Space Grant program emphases (e.g., excessive Consortium Administration Costs)
 - Action: Requested that consortia re-examine their distribution of expenditures compared with their approved FY2009 budgets
 - NASA Space Grant HQ staff will look at all 52 Expenditure Summary Data Charts and contact consortium Director if a discussion is warranted
 - Survey Monkey Issues
 - Description of General Nature of Fellowship/Scholarship Projects
 - Requested that these descriptions be concise but informative
 - Total Number of Projects
 - Definition of a “project” was not used consistently; this resulted in problems with the total number of projects reported

- Expressed interest in working with Space Grants to provide low-cost, frequent flights for student payloads
- Drew attention to upcoming conference:
 - NSRC 2011 (Next-generation Suborbital Researchers Conference)
 - Feb. 28–Mar. 2, 2011
 - Orlando, FL

37. Announcements

Greg Guzik, Louisiana Space Grant Consortium, announced that HASP (High Altitude Student Payload) 2010 launch originally scheduled for September had been postponed until May 2011. The call for HASP 2011 payloads has been issued. Applications are due Dec. 17, 2010, and the launch is planned for September 2011.

James Flaten, Minnesota Space Grant Consortium, announced two follow-up events related to last summer's 2010 Academic High-Altitude Ballooning Conference at Taylor University in Upland, Indiana:

2011 High-Altitude Intercollegiate Balloon Contest
April 15–17, 2011
University of Evansville, Evansville, IN
<http://haballoons.evansville.edu/Rules/default.html>

2011 Academic High-Altitude Ballooning Conference
Iowa State University, Ames, IA
Beginner ballooning workshop: June 20, 2011
Advanced ballooning workshop: June 21, 2011
Ballooning conference: June 22–24, 2011

Adjournment