

**National Council of Space Grant Directors Fall Meeting
Crystal City (Arlington), Virginia
March 3–5, 2011**

Minutes submitted by Ed Duke, May 20, 2011

Thursday, March 3, 2011

1. Welcome – ***Richard Berendzen***, Spring Meeting Host and Director, District of Columbia 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 1:12 pm.
- He thanked the District of Columbia Space Grant Consortium and acknowledged the Maine Space Grant Consortium for the successful Fall 2010 Directors meeting in Portland, ME.
- New Space Grant personnel and guests were introduced by the audience.

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

- Koehler pointed out that he was trying to get a complete set of Council minutes from all past meetings.
- He reviewed the status of the Office of Education Design Team with respect to proposed changes that might affect Space Grant. Last August he had provided an extensive briefing to the team on Space Grant. In December, the team released its preliminary recommendations and those were forwarded to Space Grant directors for comment and feedback. Koehler compiled the directors' feedback into a document which he presented to Diane DeTroye (Program Manager for Space Grant). DeTroye in turn provided the Design Team with a slightly condensed version of the Space Grant directors' response.

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

Minutes of the Fall 2010 (Portland, ME) Council Meeting were introduced and accepted.

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

Peter Sukanek summarized balances in the National Space Grant Foundation accounts as of Dec. 31, 2010 (table, following page).

- Between June 30, 2010, and Dec. 31, 2010, the balance in the Endowment account increased from \$6,575.54 to \$7,109.21, and the balance in the Expendable account increased from \$21,505.49 to \$30,088.90.
- Residuals from all past meetings had been received.
- The Council accepted the Treasurer's report.

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
 Alec Gallimore, Michigan
 Yervant Terzian, New York
 Aileen Yingst, Wisconsin
 Chris Brown, North Carolina
 Peter Schultz, Rhode Island

Treasurer's Report March 2011

ON DEPOSIT WITH NSGF

	ACTIVITY	PREVIOUS BALANCE	CURRENT AMOUNT
Endowment (as of 30 Jun 10)		\$6,575.54	
Income	Interest/Earnings		\$533.67
	Commissions		
	Change in Market Value		
Total Endowment (as of 31 Dec)			\$7,109.21
Expendable		\$21,505.49	
Income	Interest/Earnings		\$504.60
	Meeting Fees (F09, S10, F10)		\$8078.81
Total Expendable (as of 31 Dec 10)			\$30,088.90

Respectfully Submitted,



Peter C. Sukanek
 Treasurer

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6. Nominating Committee Update – **Bill Garrard**, Committee Chair and Director, Minnesota Space Grant Consortium (see item 12, below, for results)

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. He announced that two seats were open on the Nominating Committee (including chair) and six seats were open on the Executive Committee (including vice chair, secretary, and treasurer).

7. Student Space Grant Highlights – Space Grant students from Montana, Alabama, Maryland, and Colorado Space Grant Consortia

- Determining the Relationship between Cosmic Rays and the Atmosphere – **Courtney Peck**, Montana Space Grant Consortium
http://national.spacegrant.org/meetings/presentations/2011_Spring/3.pdf

Peck described participation in the MTSGC Borealis high-altitude balloon project (Balloon Outreach Research Exploration and Landscape Imaging System). Her work focused on scientific and technical aspects of determining cosmic ray flux as a function of altitude using instruments on balloons that reach about 75,000 feet.

- The Auburn High Altitude Balloon – **Chelsea Appleget**, Alabama Space Grant Consortium
http://national.spacegrant.org/meetings/presentations/2011_Spring/2.pdf

Appleget served as manager of the Auburn high-altitude balloon project team. The team is testing cubesat payloads on balloon launches to 75,000–80,000 feet. NASA is scheduled to launch the cubesat into orbit in October.

- Maryland Space Grant Consortium: Student Experience Highlights – **Heather Bradshaw**, Maryland Space Grant Consortium
http://national.spacegrant.org/meetings/presentations/2011_Spring/5.pdf

Bradshaw discussed NASA programs that she had participated in and the impact of the programs on her education and career. These included NASA Academy internships working on the James Webb Space Telescope and a Venus sample return mission, a NASA Co-op working on the Solar Dynamics Observatory, and experience at the Mars Desert Research Station (Hanksville, UT).

- Satellite and High Altitude Balloon Projects of the Colorado Space Grant Consortium – **Kyle Kemble**, Colorado Space Grant Consortium
http://national.spacegrant.org/meetings/presentations/2011_Spring/4.pdf

Kemble reviewed three COSGC team projects: a payload for the High Altitude Student Platform (HASP) balloon, and two satellite projects—the Drag and Atmospheric Neutral Density Explorer (DANDE) and the Telescopic High-definition Earth Imaging Apparatus (THEIA).

8. NASA Update – *Lori Garver*, NASA Deputy Administrator

(presentation slides not available)

(Introductions by Diane DeTroye, National Space Grant Program Manager, and Leland Melvin, NASA Associate Administrator for Education)

Garver presented an overview of NASA’s new strategic plan, the FY 2012 budget, and the role of education within NASA. Following this she addressed questions from the audience.

2011 Strategic Plan

- The vision of NASA is *to benefit humankind*.
- It is important to decide “*What does NASA do best?*”

FY 2012 Budget

- The proposed FY 2012 budget includes \$18.7 billion for NASA.
 - NASA Office of Education is listed at \$138 million, less than 1% of the agency budget
- Human Space Flight is the largest component of the budget at 44% (57% if you ignore overhead).
 - Within Human Space Flight, are the following priorities:
 - Deep Space (39%)
 - heavy-lift launch vehicles
 - multipurpose crew vehicles
 - International Space Station (ISS) (40%)
 - project an additional 10 years of activity on ISS
 - Commercial Spaceflight (12%)
 - partly for access to ISS
 - Shuttle Retirement and Disposition (9%)
- NASA’s Science budget for FY 2012 breaks down as follows:
 - Earth (36%)
 - Planetary (31%)
 - Astrophysics (14%)
 - James Webb Space Telescope (7%)
 - Heliophysics (12%)
- As an agency, NASA must contribute to the nation’s goal to *out-innovate, out-educate, and out-build* other nations.
- In order for NASA to remain funded at a level of \$18.7 billion, it must succeed in the major priority areas, such as maintaining the International Space Station.
- President Obama and his chief science advisor John Holdren believe that science and technology are absolutely critical.
 - The FY 2012 budget reflects the importance of research and development across agencies in order to promote the “*innovation strategy.*”

NASA Office of Education

- The new NASA Chief Administrator (Charlie Bolden) felt that it was important to review NASA's education programs and to develop a *strategic approach to education* ("not just 20 pages of projects").
- She expressed satisfaction with the Office of Education Design Team process and its recommendations.
- The goal is to support education, but we need to make the best investments with NASA's education funds.

Questions from the audience

Q: What is the vision of NASA regarding its role in education? (Gallimore)

A: Success in this area should include:

- inspiring and developing the next generation of scientists and engineers
- promoting US leadership and economic growth
- making girls in junior high believe that they can be engineers and that they can make the world a better place
- reaching students early
- we need to focus on middle school
- we need to work with states to develop better formats for STEM education standards

Q: What is the role of NASA education with regard to future transitions in the NASA workforce and the STEM workforce in general? (Schultz)

A: We need to work with states to get students involved in STEM. Make them understand that "Their career may not have been invented yet." We need to work with industry to ensure that they are the workforce engine of the future.

Q: Space Grant represents a nationwide network of nearly 1000 affiliates. How can we use this to advance NASA's education goals? (Garrard)

A: Space Grant can keep the STEM pipeline going. But we must be "rowing together." We need to dispel the notion that human spaceflight is no longer an aspiration.

Q: President Obama and Chief Administrator Bolden are very supportive of education. Why is the NASA budget for education flat in future years? (Sukanek)

A: Most of the NASA budget is flat in future years—these figures are "notional." The best bet is to perform well now—then the budget will go up.

Q: In the three-year NASA Authorization Bill of 2010, Space Grant is funded at \$45.6 million each year. Yet the FY 2012 budget only funds Space Grant at \$26.6 million. How can we work with you to get that budget level increased? (Henry)

A: "Impress us." Those figures reflect the NASA core budget. We realize that Congress may add more, but let's do more.

Q: (Comment rather than a question) What inspires the public is *space!* *Please double the NASA education budget!* (Terzian)

Questions for the audience from Lori Garver

Garver posed several questions to the group and entered into discussion.

Garver: Did you visit all congressional offices? How did it go?

Henry: Yes, 52 offices. It went well.

Sandy: It was a very good experience this year. Space Grant is a proven program and we have the impact data to back it up.

Garver: What is the impact data?

Various: Gave examples of data.

Garver: Disagreed that “impact metrics” were sufficient; these are not “outcomes.” We need outcomes, not metrics. In a hospital, it’s not a question of how many people we treated, but how many survived.

Sandy, Thorsen: Elaborated on outcomes and longitudinal tracking data.

Garver: We are all part of NASA. Did you talk about NASA in general with Congress?
(no specific response)

Whitney Lohmeyer: [Lohmeyer is a former Space Grant student and winner of the inaugural Women in Aerospace Foundation Scholarship] Everything that she has accomplished has been because of her participation in Space Grant. What can Space Grant students do to help NASA and the Space Grant program?

Garver: Your success is critical to convincing Congress to increase the NASA budget (and the education budget). We all should be able to quantify these impacts. We are all NASA—including all taxpayers. Garver’s challenge is to convince the elected leadership that those tax dollars are well spent.

9. Space Suit Research in North Dakota: It Began with Space Grant – Pablo de León , University of North Dakota, sponsored by the North Dakota Space Grant Consortium
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http://national.spacegrant.org/meetings/presentations/2011_Spring/6.pdf

Pablo de León discussed the evolution of space suit research and related projects supported by the North Dakota Space Grant Consortium.

- Space suit research began in 2004 through a grant from NDSGC to the department of Space Studies at UND.
 - The project has provided students with practical, hands-on experience with many design factors important in health, safety, and mobility.
 - The suit was fabricated and field-tested in the North Dakota Badlands and at the Mars Desert Research Station (Hanksville, UT).
- Research progressed to the development of spacecraft simulators.
 - one simulator of a NASA capsule
 - one simulator of SpaceShipOne

- The next phase of research included establishment of a Human Spaceflight Laboratory at UND.
- Most recently, the group has begun a project on “Integrated Strategies for the Human Exploration of the Moon and Mars” funded through a NASA EPSCoR research award.
 - focus on inflatable, rigid-frame habitat
 - also exploring rover designs
 - project includes 12 graduate and 18 undergraduate students

10. National Center for Earth and Space Science Education – *Jeff Goldstein*, Center Director, sponsored by the District of Columbia Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2011_Spring/7.pdf

(Introduction by Richard Berendzen, Director, District of Columbia Space Grant Consortium)

Goldstein described the educational philosophy and programs of the National Center for Earth and Space Science Education (NCESSSE).

- The NCESSSE approach is “*Inspire...then Educate.*”
 - The center emphasizes a learning community model—a community-based consortium of organizations
 - A variety of programs are in place for both formal and informal education settings
- Examples of NCESSSE programs include:
 - Family Science Night at the Smithsonian’s National Air and Space Museum
 - since 1993, 139 programs have been held reaching 47,800 parents, students, and educators
 - Journey through the Universe
 - presentations and training programs for K-13 students and educators
 - Voyage (a Journey through our Solar System)
 - understanding Earth’s place in the Solar System through installation of one to 10-billion scale models of the Solar System in communities across the US
 - includes lesson plans for K-13
 - MESSENGER Educator Fellows
 - provides MESSENGER education modules and training for MESSENGER Education Fellows
 - Student Spaceflight Experiments Program (SSEP)
 - in partnership with NanoRacks LLC
 - provides real on-orbit research opportunities for grades 5-12 and two-year college students
 - experiments for research mini-laboratory on STS-134 (*Endeavor*) or STS-135 (*Atlantis*)
 - 16 teams selected, engaging 20,000 students (11 teams are sponsored by Space Grant consortia)
 - Arthur C. Clark Institute for Space Education
 - international arm of NCESSSE
 - dedicated to training citizens and science educators in earth and space science

11. Announcement: Update on Space Grant Internship Working Group, **Barrett Caldwell**, Working Group Chair and Director, Indiana Space Grant Consortium

Caldwell announced that NASA will be implementing the new OSSI/SOLAR (One Stop Shopping Initiative/Student On-Line Application for Recruiting Interns, Fellows, and Scholars) process for this summer's internship applications.

Comments from the audience:

Frank Six: All NASA Academy applications will be through SOLAR this year.

Mary Sandy: LARSS (Langley Aerospace Research Summer Scholars) is not in SOLAR at this time.

12. Election Results

Bill Garrard presented the results of Council elections:

- The following were elected to two-year terms on the Executive Committee:
 - Chris Fritsen (NV), vice chair
 - Scott Tarry (NE), secretary
 - Peter Sukanek (MS), treasurer
 - Stephen Ruffin (GA)
 - Peter Schultz (RI)
 - Aileen Yingst (WI)
- The following were elected to two-year terms on the Nominating Committee:
 - Bill Garrard (MN), chair
 - Dermott Mullan (DE)

Friday, March 4, 2011

13. Program Update – **Diane DeTroye**, National Space Grant Program Manager (with assistance of **Katie Pruzan**, NASA/Valador, Inc.)

http://national.spacegrant.org/meetings/presentations/2011_Spring/1.pdf

DeTroye acknowledged NASA Deputy Administrator Lori Garver's visit on Thursday and she indicated that her visit was a positive sign. She also noted that Leland Melvin was very excited about his new position as Associate Administrator for Education.

DeTroye noted Lori Garver's comments regarding "outcomes" versus "impacts." Program evaluation is more than just numbers. DeTroye said that she would be updating Garver with the latest outcome data for Space Grant.

2011 Budget Situation

She pointed out that the FY 2011 budget was still being debated in Congress. The federal government was operating under a continuing resolution for funding. Under a continuing resolution, NASA funding (including Space Grant) follows the precedent of the 2010 NASA

Authorization Bill. However, if new appropriations bills are passed, those funding levels would supersede the levels in the Authorization Bill.

Education Program Review

A 2012 Education Program Review by the House Appropriations Committee recommended the establishment of the Aerospace Research and Career Development Program (ARCDP). In practice, this consists of the Space Grant and NASA EPSCoR Programs, which would be separated from other Office of Education programs.

Education Design Team Status

- The Design Team appreciated the input from the Space Grant community.
- DeTroye had consolidated input from directors and submitted it to the Team.
- Team leaders, Jim Stofan and Trish Pengra, briefed Chris Koehler on Jan. 14, 2011.
- The Team submitted its final recommendations to Charlie Bolden and Lori Garver on Jan. 21, 2011.
- The recommendations await final review and acceptance by Leland Melvin, Associate Administrator for Education.
- The Education Coordinating Committee is will be charged with implementing the recommendations; DeTroye will serve on two (or more) of the ECC Working Groups.

Introductions of NASA Personnel in Attendance

DeTroye acknowledged and introduced NASA personnel and supporting staff in the audience; at least 10 Space Grant or NASA EPSCoR support staff were introduced.

Access to NASA IT Systems

DeTroye summarized the process and status of accessing NASA IT systems for Space Grant reporting and other functions.

- The process involves two steps:
 1. Establish an “identity” through the Identity Management and Account Exchange (IdMAX); this establishes a “remote user” identity.
 2. NASA approves access to selected systems applicable to Space Grant.
 - Office of Education Performance Measurement (OEPM) system
 - this requires at least two contacts per consortium
 - One-Stop Shopping Initiative: Student On-line Applications for Recruiting Interns, Fellows, and Scholars (OSSI:SOLAR) system
 - this requires one contact per consortium
- Identities established prior to Dec. 31, 2010, were terminated.
 - Sasha Korobov will be working on reactivating terminated users
- OEPM system is still under development.
- OSSI:SOLAR system is operational and requires an approved “Space Grant User.”
- Users will undergo on-line IT security training.
 - However, this training may be waived so that users can access OSSI:SOLAR now and view summer 2011 intern and Academy applicants

- There will be additional training on the OSSI:SOLAR system during the meeting Saturday; this will address users with current access as well as workaround solutions for summer 2011 for users without access.

OSSI:SOLAR Training

The training session will take place during the meeting Saturday. Her office is still working on establishing 52 “Space Grant Users” through IdMAX. The session will address using OSSI:SOLAR for users with approved access as well as a workaround process for the coming summer for users who do not yet have access.

Unexpended Funds

She emphasized that it is critical to draw down funds in a timely manner. The rate of spending is one of the metrics tracked by NASA as an agency.

- Congress could reduce future appropriations if there appear to be large amounts of unexpended funds.
- Her office (LaTeicia Durham) is currently analyzing unexpended funds for all Space Grant and NASA EPSCoR awards. In some cases, the consortium may receive a letter regarding this.
- Make sure that your consortium is submitting bills to NASA to document spending.

Solicitation Updates

Recent and current solicitations of interest to Space Grant include:

- Ralph Steckler/Space Grant Space Colonization Research and Technology Development Opportunity Phase II (proposals were due Jan. 12, 2011, review in progress)
- “Grant Us Space” – exclusive Space Grant Reduced Gravity Week (proposals were due Feb. 2, 2011, review in progress)
- Experimental Program to Stimulate Competitive Research (EPSCoR) – Research Announcement (proposals are due Mar. 11, 2011)
- CubeSat Launch Initiative
 - 20 CubeSat Education Launch of Nanosatellites (ElaNa) selections were announced Feb. 8, 2011; several with Space Grant sponsorship or strong Space Grant connections
- Competitive Program for Science Museums and Planetariums (CP4SMP)
 - NASA anticipates issuing a FY 2011 CP4SMP NRA (call for proposals) as soon as practicable
- Summer of Innovation 2011
 - Proposals recently submitted
 - Focus is middle school students and teachers
 - Some components of program are being redesigned for 2011 and should be available for the summer
 - interaction with NASA Centers (ongoing)
 - mini-grants to enhance student engagement and teacher training (one time, up to \$2500)
 - website resources (ongoing)

- Education Opportunities in NASA STEM (EONS)
 - This is a pilot NASA Research Announcement (NRA) that serves as an umbrella for opportunities in support of the Office of Education under the Minority University Research and Education Program (MUREP).
 - Curriculum Improvement Partnership Award for the Integration of Research (CIPAIR)
 - Innovations in Global Climate Change Education (IGCCE)
 - MUREP Small Projects (MSP) Transformational Performance in STEM Using Innovative Solutions
 - Solicitation released on Jan. 7, 2011 (proposal due dates vary depending on the opportunity)
 - EONS will also include MUREP-specific projects of Marshall and Stennis Space Flight Centers
 - The intent is to use the EONS announcement to consolidate all MUREP opportunities

Space Grant Outcomes and Results

DeTroye reviewed recent performance data and pending data reporting for the 2010 program year.

- 2009 Annual Performance Documents (ADPs) have been posted on the NASA website in accordance with OMB government transparency requirements.
- 2010 Progress Report and ADP instructions were sent to consortia on Jan. 31, 2011.
 - this serves as progress report for accomplishments stemming from 2010 base funds and augmentation funds
 - if budget changes are necessary in the second year (2011 program year), a request must accompany the Progress Report/ADP
 - regarding what level of budget change requires a budget revision, she pointed out that we must adhere to guidelines in the NASA Grant and Cooperative Agreement Handbook
 - she mentioned that LaTeicia Durham would be sending out clarification on budget changes
 - upon acceptable review of the APD and, if required, the revised budget, she will be able to initiate FY 2011 base funding
 - if Congress approves additional funds above the base level, consortia will be required to submit a proposal for such augmentation funds
- Regarding the potential impact of the forthcoming Design Team recommendations, she indicated that those changes would be “evolutionary, not revolutionary.”

Discussion:

Terzian: We need to know right now about funding for our summer students. We do not yet have the 2011 funds that we need to provide them positions this summer. What do we do?

DeTroye: The timing is unfortunate. She did not have a solution.

- 2010 Performance Results Data Collection
 - OEPM will not be available
 - Additional instructions will be provided later in the year for the
 - “Survey Monkey”
 - Expenditure Summary
 - Student Data Table Inputs
 - Timing of the request will be much earlier in the year – anticipate April/May
 - Data are required 60 days prior to expiration, so it is understood that not all funds will have been spent
- DeTroye reviewed a series of slides on Space Grant performance results (as of 2009 data) that had been presented to NASA administrators.
 - Important Space Grant metrics included:
 - 987 affiliates
 - 80% leveraging of NASA funding
 - 21,000 direct student participants in higher education programs
 - 39% female participation (higher education programs)
 - 29% underrepresented minority participation (higher education programs)
 - 93% of longitudinally-tracked students retained in STEM workforce or STEM academia
 - 125,000 precollege students (20% of Office of Education result)
 - Areas where additional effort is needed included:
 - need to keep Consortium Administration costs down; these average 15.5% of NASA plus cost-share funds
 - need to increase percentage of female students in higher education programs; current data show 39%
 - Overall, she described the contribution of Space Grant to the Office of Education as “dang good.”
 - the Space Grant contributions to the Office of Education results were generally far greater than the Space Grant proportion of the Education budget (25% of total budget, 38% of higher education budget)

14. 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/2011_Spring/1.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)
 - Mike Wiskerchen, Secretary (CA)
 - Philippe H. Geubelle (IL)
 - Peter Sukanek (MS)
 - Pat Hynes, Treasurer (NM)
- 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, student competitions), and as an external interface (e.g., Owen Software).

- The ESMD Space Grant Project currently includes the following opportunities:
 - Senior Design Projects
 - Support for ESMD related senior design projects
 - 82 applications from 25 states
 - 36 projects supported from 24 states
 - 9 NASA Centers
 - Student Internship Opportunities
 - Support for ESMD related student internship opportunities at NASA contractors
 - 14 states
 - 50 opportunities
 - 24 unique NASA contractors
 - Faculty Fellowships
 - Support for ESMD related faculty fellowships at NASA Centers cumulating in a senior design course
 - 4 fellowships from 3 states (FL, NC, TX)
 - 4 NASA Centers (GSFC, JSC, KSC, MSFC)
 - Lunabotics Mining Competition
 - University robotics competition for lunar excavation
 - Culminates in head-to-head competition at KSC
 - 60 teams
 - 9 countries represented
 - 28 states represented
- A new program of NSGF is the eXploration Habitat (X-Hab) Academic Innovation Challenge Solicitation.
 - university competition to design, manufacture, assemble, and test an inflatable loft that will be integrated onto an existing NASA built operational hard shell prototype
 - 3 student teams (OK State, U MD, U WI)
 - head-to-head competition
 - held at NASA Desert Research and Technology Studies (D-RATS) – June 2011
- Another new program of NSGF is the Women in STEM High School Aerospace Scholars Program (with NASA/JSC).
 - female juniors in high school
 - one year relationship with JSC
 - on-line community
 - leading female STEM professionals
 - one week summer experience at JSC
 - <http://wish.spacegrant.org/>
- 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

15. Space Foundation Education Programs – **Iain Probert**, Space Foundation Vice President for Education, sponsored by the Colorado Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2011_Spring/8.pdf

Probert described a special offer to the Space Grant community to participate in the 2012 National Space Symposium (Apr. 16–19, 2012, Broadmoor Hotel, Colorado Springs, CO).

- This will be the 28th annual National Space Symposium.
 - they anticipate 8000-9000 attendees at the four-day event
 - 20 nations will be represented
 - a special New Generation Space Leaders program (under 35 years of age) could be especially relevant to Space Grant students
- The Space Foundation’s special outreach offer to Space Grant includes the following:
 - 10’x20’ exhibit booth space
 - 15 New Generation Space Leader registrations
 - 1 symposium registration for the Chair of the National Council of Space Grant Directors
 - 4 symposium registrations for additional Space Grant consortium directors
 - up to 20 additional registrations for students or consortium staff at a special reduced rate
- The National Space Grant will be responsible for:
 - providing and staffing a meaningful exhibit booth during the four days
 - shipping and travel costs
 - selection and payment for 15 current Space Grant graduate students at reduced registration rate
- For additional details see www.nationalspacesymposium.org or contact Iain Probert at 719-576-8000

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

http://national.spacegrant.org/meetings/presentations/2011_Spring/9.pdf

(presented by Sharon Brandt)

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.)

Brandt also announced the WSGC Collegiate Rocket Design Competition May 7, 2011

17. Fall 2012 National Meeting – **Robert Winglee**, Director, Washington Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2011_Spring/10.pdf

The Fall 2012 Directors Meeting will be at the Red Lion Hotel, Seattle, WA, Oct. 25–27, 2012.

18. “My Great Idea for Space Grant” – audience

Koehler solicited written and oral suggestions from attendees focusing on the subject “My great idea for Space Grant.” Written suggestions were collected and the following comments were voiced:

1. Hold a general Space Grant convention in Washington, DC, that includes all affiliates, NASA administrators, etc.—there would be more than 1,000 people. (Yervant Terzian)
2. Invite more or people from the public, community, and business to events such as *RockOn!* (Janice Riley)
3. Have more site visits (to consortia) by NASA staff. (Warfield Teague)
4. Form a Space Grant alumni association that invites one student from each consortium to national meetings to showcase their accomplishments. (Whitney Lohmeyer)
5. Respond to Lori Garver’s challenge (what are our outcomes?) by having one student from each consortium e-mail Garver describing how NASA has changed their life; include photos, etc. (Pat Hynes)
6. Provide mentors for new Space Grant directors. (Stephen Ruffin)
7. Compile student success stories into booklets. Set up a National Success Stories web page. How did Space grant change my life? (Talia Jurgens)
8. Involve K-12 students in annual national launch competitions (similar to First Nations Launch competition). (Sharon Brandt)
9. Have student posters (one from each consortium) in the banquet area at national meetings. (Toni Galvin)
10. At national meetings, the NASA Headquarters guests should be bombarded with posters showing student accomplishments—in hallways, near conference room, etc. (Baruh Haim)
11. Have a standard procedure for inviting members of Congress to visit programs in the states. (Wally Fowler)
12. Display Space Grant student posters on the Hill. (Mary Sandy)
13. Have a Space Grant Facebook page and invite Lori Garver. (Pat Hynes)
14. Have Space Grant participate in the Council on Undergraduate Research poster day on the Hill and also display posters at NASA Headquarters. (Mitch Colgan)
15. Their student advisory group has asked for Space Grant graduation sashes at each member university that would carry the Space Grant and NASA logos. (Susan Brew)
16. Diversify the funding sources—make “billionaire visits,” not just “Hill visits.” (Raji Patel)
17. Have a portable Space Grant exhibit booth available that could be used at a variety of national meeting venues. (Chris Fritsen)
18. In response to Lori Garver’s challenge that we help NASA, how about a stamp (postage stamp?) with some of the proceeds returned to NASA? (Terry Flower)
19. Emphasize entrepreneurship. (Alec Gallimore)
20. (a) How can we work with the 20-plus years’ worth of Space Grant alumni, many of whom are in high places? Can we build a Space Grant academy? (b) We need a mechanism to acknowledge contributions of past directors. (Fathi Finaish)
21. Can Space Grant Headquarters provide copies of the top ten progress reports (most successful consortia) in an effort to help struggling consortia? (Dwayne Westenskow)
22. Feature more student-generated talks. Develop regional cubesat consortia. (unknown?)

23. (a) Provide mentors for new directors. (b) Acknowledge past directors. (c) Develop thematic research working groups that take advantage of our expertise—go for big funding. (Sugu Sugumaran)
24. Don't just focus on the top students—try to help those for whom the fellowship or scholarship really makes the most difference. (Bernhard Beck-Winchatz?)
25. Hold a director meeting or retreat to develop strategies and recommendations (different focus from current meetings). (Mitch Colgan)
26. Require Space Grant students to do “a good turn” (public service, outreach). (Dave Rosage)
27. Nominate a Space Grant alumnus or alumna to be honored at the meeting banquet. (Sharon Brandt)
28. Launch schedules and delays are a problem for student teams. Start a national Space Grant cubesat program. (Glenn Lightsey?)
29. Develop common interest groups within Space Grant. Consider mechanisms to reallocate unspent portions of budgets. (unknown?)
30. Utilize our retirees—“Friends of Space grant.” (Wally Fowler)
31. Have each consortium bring a door prize to meetings—something representative of that state. (Mary Sandy)
32. Facilitate more workshops (Balloon Workshop, *RockOn!* model); e.g., a cubesat workshop. (Bill Garrard)
33. Have each Space Grant student go back to their old high school and deliver a presentation. (Tehseen Lazzouni)
34. Have formal recognition for winners of student competitions. (Chris Fritsen)
35. Reporting is a major issue—could we have our own reporting system (compatible with OEPM)? (James Flaten)

Koehler brought the session to a close and requested that the audience fill in the “great idea” forms and hand them in to him. He added several ideas of his own:

36. Develop a catchy Space Grant video that would “go viral” on YouTube.
37. Change the annual Distinguished Service Award to a Distinguished Space Grant Alumni Award.
38. Take the “great ideas” and make them even greater; e.g., fill a huge convention center for the Distinguished Space Grant Award ceremony.

19. Open Mic – Announcements

Randy Larimer, Montana Space Grant Consortium, described opportunities to participate in the National Student Solar Spectrograph Competition. The spectrograph competition is MSGC's education program for the IRIS solar spectrograph. IRIS (Interface Region Solar Spectrograph) is a Small Explorer Mission under development which will study the solar atmosphere, especially the transition region and chromosphere. Student teams are challenged to design, build, and demonstrate a working solar spectrograph for IRIS. Priority will be given to MSIs and institutions with limited aerospace activity.

- The annual competition will include about 28 teams, each consisting of 3–6 members.
- Scholarships and travel awards are available.
- The 2012 competition will take place May 16–18, 2012, in Bozeman, MT.
 - Applications are due May 30, 2011.

- Details at: <http://www.spacegrant.montana.edu/IRIS/index.html>
or contact Randy Larimer at: rlarimer@ece.montana.edu
http://national.spacegrant.org/meetings/presentations/2011_Spring/13.pdf

Chris House, Pennsylvania Space Grant Consortium, (and Heather Nelson) announced an opportunity for recruitment of citizen scientist volunteers to study domestic water heater microbiology. The program is part of the Penn State Astrobiology Research Center. They are seeking 2–3 volunteer samplers from each state.

Stephanie Finnvik, Wisconsin Space Grant Consortium student, showed a video from a camera on a student balloon launch that reached 93,000 feet. She noted that her team will be involved in outreach.

Dave Rosage, NASA Goddard Space Flight Center, announced that he is still acting as liaison between Space Grant and the NASA Academy program at Goddard. The program will be using the OSSI:SOLAR system this year. He asked for informal estimates of how many students the consortia would be supporting this summer. Diane DeTroye recommended that he hold off on that request, because OSSI:SOLAR would be available soon and it would be better to get this information through that system.

20. Lunch and Keynote Speaker – Sponsored by Owen Software

Nobel Laureate **John Mather** (Senior Astrophysicist, NASA Goddard Space Flight Center) presented his views on “From the Big Bang to the Nobel Prize and on to the James Webb Space Telescope and Discovery of Alien Life.”

21. NASA Updates – **Waleed Abdalati**, NASA Chief Scientist

Abdalati noted that he had held the position of NASA Chief Scientist for only two months. His background is polar ice research and he is on IPA (Intergovernmental Personnel Act) from the University of Colorado at Boulder.

NASA Science Budget

He gave a breakdown of the NASA budget by programmatic area:

Space	57%
Science	35%
Aeronautics	4%
Education	1%
Space Technologies	3%

The FY 2012 budget request for NASA Science is \$5,017 million. He pointed out that science is part of the core mission of the NASA Space Act. NASA science addresses questions at the core of the human spirit: the nature of the planets and sun, the origin of the universe, the study of the earth from space, the earth’s atmosphere, and physical and biological processes in space.

Office of the Chief Scientist Functions

The OCS was recently reestablished, having been abolished in 2004.

- OCS functions:
 - advise the Chief Administrator
 - represent NASA Science externally
 - act as point-of-contact for science within NASA
 - foster interactions across the Mission Directorates within NASA
 - foster interactions between NASA and international partners
- OCS goals:
 - maximize scientific returns
 - ensure the merit, value, and integrity of the process
 - achieve recognition of *NASA as a science agency*

Challenges

Significant challenges exist:

- Level funding
- High cost of space access
- More good ideas than resources

His office will use the Decadal Surveys as guidance to prioritize resources

Questions

Q: What should we be doing better in training students?

A: On the training side we are doing a pretty good job. The biggest area for improvement is in attracting more students into STEM fields.

22. Hands-On Projects and Workshop Updates

Educational CubeSats Update

Angela Des Jardins, Director, Montana Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2011_Spring/12.pdf

Des Jardins gave an update on the Educational Launch of Nanosatellites (ELaNa) program.

- She reported the disappointing news that the launch of ELaNa I had failed earlier in the day.
 - Students from the Montana, Colorado, and Kentucky Space Grants had lost nanosatellites.
- NASA will continue to provide launch opportunities through the NASA CubeSat Launch Initiative. Plans are in place for ELaNa II and III.

Comments

Chris Koehler: Expressed appreciation that NASA was making these launch opportunities available.

Luke Flynn: Noted that the cost for launches on ELaNa II and III (~\$40,000–\$70,000) was very reasonable compared with commercial or other launches.

CubeLab Payload Developers Workshop

Suzanne Smith, Director, Kentucky Space Grant Consortium, introduced **Kris Kimel**, President, Kentucky Science and Technology Corporation

http://national.spacegrant.org/meetings/presentations/2011_Spring/15.pdf

- Kimel reviewed past balloon, rocket, and cubesat projects of Kentucky Space.
- He then described opportunities to partner with Kentucky Space and NanoRacks, LLC, to place experiments on the International Space Station.
 - He reviewed examples of research projects for the micro-gravity environment of the ISS.
 - He compared the standard process for getting experiments approved for the ISS with the expedited opportunities provided by Kentucky Space and NanoRacks.
 - They can help develop self-contained CubeLab payloads from 1–16 kg.
 - They can generally get the payload to orbit in 6–12 months (compared with standard 18–36 months).
 - Their process for getting a payload to ISS costs about \$25,000.
 - They are currently exploring options for reaching ISS after Shuttle retirement.
- CubeLab Payload Developers Workshop
 - The workshop will help developers design experiments that can be integrated with available CubeLab and NanoRacks modules and other resources in order to expedite access to the ISS.
 - Workshop dates: July 11 – 15, 2011, in Lexington, KY
 - Registration fee: \$1450
 - Registration deadline: June 15, 2011

Academic High Altitude Conference

Jay Staker, Iowa Space Grant Consortium

http://national.spacegrant.org/meetings/presentations/2011_Spring/14.pdf

Staker announced that the Second Annual Academic High Altitude Conference will take place June 22–24, 2011, at Iowa State University, Ames, IA.

2011 Helicopter Programs

Tom Filburn, Director, Connecticut Space Grant Consortium

Filburn announced two 2011 Helicopter Programs sponsored by Connecticut Space Grant and Central Connecticut State University:

- Student program
 - June 19–26, 2011, at Central Connecticut State University, New Britain, CT
 - Registration fee: \$500
- Faculty program
 - July 10–15, 2011, at Central Connecticut State University, New Britain, CT
 - Registration fee: \$1500

NASA University Student Launch Initiative

John Gregory, Director, Alabama Space Grant Consortium

Gregory announced the upcoming NASA University Student Launch Initiative (USLI) sponsored by Marshall Space Flight Center.

- Training workshops will be held in summer 2011 (probably two workshops)
- Competition tentatively set for Apr. 16, 2012, in Huntsville, AL
<http://education.msfc.nasa.gov/usli>
- Tentative planning is also underway for a balloonsat competition in spring 2012.

RockOn! 2011 and RockSat

Chris Koehler, Director, Colorado Space Grant Consortium

Koehler reminded the audience about the 2011 *RockOn!* workshop and launch at Wallops Flight Facility (sponsored by NASA and the Colorado and Virginia Space Grants).

- *RockOn!* 2011
 - June 18–23, 2011
 - http://spacegrant.colorado.edu/rockon/2011/index_2011.html
- RockSat-C and RockSat-X
 - These are two additional opportunities at Wallops. There are plans for two launches each in 2011 and 2012.
 - Workshop dates: June 18–23, 2011
 - Registration fee: \$1500
 - Registration deadline: May 3, 2011

23. NASA Education Updates – **Leland Melvin**, NASA Associate Administrator for Education

(no presentation slides available)

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

Background

Melvin provided a brief background on his career and its relationship to education:

- Both parents were middle school teachers
- His training is in materials science and engineering (especially chemistry)
- As an astronaut, he completed two Shuttle missions
- He has been part of the NASA Educator Astronaut Program
- Recently he has been part of the Education Program Review (Education Design Team)

Education Design Team

Melvin provided an overview of the Education Design Team process and recommendations

- NASA education programs make up only 5% of federal STEM education funding
- How does NASA make a difference?
- NASA has a unique “power to convene”

He reviewed the EDT process:

- The EDT held roughly 27 meetings

- The group consulted more than 40 NASA and non-NASA experts
- The process was now almost complete

He summarized the Design Team recommendations:

1. Focus the NASA education program to improve its impact on areas of greatest national need.
 - 1.1. Focus K-12 programs on middle school pre- and in-service STEM educator training
 - 1.2. Focus Higher Education programs on providing experiential opportunities for students, internships, and scholarships (Space Grant)
2. Identify and manage NASA education strategic partnerships. (NASA can't do it all.)
3. Participate in national and state STEM education policy discussions.
4. Establish a structure to allow for the Office of Education, Centers, and Mission Directorates to implement a strategically integrated portfolio.
5. Expand the charter of the Education Coordination Committee to enable deliberate education program design and evaluation.
6. Improve communication to inspire learners.

(see e-mail from Chris Koehler dated Dec. 8, 2010 for draft recommendations)

Implementation process:

- The recommendations will be implemented in summer and fall of 2011

New structure for Education programs and projects

- FY 2011 budget structure included three major categories.
- FY 2012 budget structure has just two:
 - Aerospace Research and Career Development
 - Space Grant
 - EPSCoR
 - STEM Education and Accountability
 - Minority University Research and Education
 - Formal and Informal Education
 - Evaluation, Performance Monitoring, and Accountability
 - Innovation in Education

Questions from the audience

Q: Lori Garver challenged us to try to get more resources for NASA overall. How do we get the agency and the congressional budget levels closer? (Hoffman)

A: Let's try to find out, not "play the game."

Q: Regarding the new structure of education programs, can funds be transferred between the two major categories (STEM Education and Accountability and Aerospace Research and Career Development)? (Jaraiedi)

A: No, the Space Grant and EPSCoR funds are generally fixed by Congress.

A: (Jim Stofan, Deputy Assistant Administrator for Integration) NASA can move up to 10% of the budget between budget lines.

Q: Considering that NASA has such a small fraction of the federal education budget (5%), is it possible that it will be taken away? (Mullan)

A: These are unpredictable times, but NASA has unique offerings in education and many supporters.

Q: The PART (Program Assessment Rating Tool) statistics show how much Space Grant contributes to the Office of Education. What else can Space Grant do? Should Space Grant manage MUREP? (Gregory)

A: Possibly—discussions are starting.

Q: What is your “Great Idea” for Space Grant? (Koehler)

A: Come together and speak with one voice.

Saturday, March 5, 2011

24. Mission Directorate Working Group Chair Reports

Science Mission Directorate

Terry Teays presented the summary.

- Terry Teays (space science) and Mitch Colgan (earth science) are co-chairs.
- Teays provided an update on a pilot internship project.
 - The project helps to place Space Grant students in internship positions for SMD missions that are not associated primarily with NASA Centers
 - Hubble Space telescope
 - Chandra X-Ray Observatory
 - NASA Astrobiology Institutes
 - Lunar Science Institutes
 - The on-line application system was developed with the help of the National Space Grant Foundation
 - 27 applications were received
 - applications are closed and mentors are reviewing the applicants
- There are also funds available for a post-doc with the Lunar Science Institute to work on a citizen scientist project.

Aeronautics Research Mission Directorate

Stephen Ruffin (chair) and gave the report

- He noted that John Sullivan, NASA Senior Technical Advisor for Aeronautics, had been present at the session and had provided an overview of ARMD.
- The group discussed the possibility of working with NASA in the following areas:
 - future aircraft design
 - museum-in-a-box program
 - inviting NASA personnel to visit state Space Grants
 - conducting webinar meetings with NASA personnel
- Haim Baruh (NJ SGC) will be the new chair

Exploration Systems Mission Directorate

Wally Fowler (chair) presented the summary.

- Fowler noted that Space Grant already has strong links with ESMD at the undergraduate level.
- More interaction at the graduate level may be coming.
 - we need to generate a list of research problems that could be addressed through the program
 - we need to get NASA personnel on graduate committees
- We need to conduct an awareness campaign for Space grant within NASA—make sure that NASA knows what our students do for the agency.

Space Operations Mission Directorate

Ton Filburn (chair) gave the report.

- The discussion focused on the following opportunities:
 - the International Space Station has been designated as a national laboratory
 - we need to reconnect with Mark Severance of the NASA Johnson Space Center ISS National Lab Education Office
 - we need to get involved with the commercial launch aspects of NASA

Office of the Chief Technologist

- **Luke Flynn** serves as chair of this new working group and gave the report.
- The working group had 17 people express an interest.
- Some of the key discussion points were:
 - the OCT technology roadmap is now available; it has 12 major technology goals
 - Space Grant should take the opportunity to get involved with OCT now, as the office is in its formative stages
 - requests for proposals for OCT projects are just now beginning to be issued
 - OCT and Space grant can cooperate on early stage technologies
 - we should try to get an OCT representative to attend the Fall Meeting (Green Bay, WI) in order to get an update
 - we should try to get support from OCT for Space Grant student programs

25. Consortium Coordination Session – Diane DeTroye , National Space Grant Program Manager (with assistance of Courtney Danto)

http://national.spacegrant.org/meetings/presentations/2011_Spring/16.pdf

DeTroye and Danto provided an update and tutorial on Space Grant in OSSI:SOLAR (NASA's One Stop Shopping Initiative [OSSI] and Student On-Line Application for Recruiting Interns, Fellows, and Scholars [SOLAR] System).

DeTroye emphasized that the system will be used for Space Grant internship applications for summer 2011. However, at this point directors and coordinators have not received approved access to the system, so a workaround approach will be used.

DeTroye introduced Courtney Danto who guided the tutorial session on using OSSI:SOLAR.

Overview of OSSI:SOLAR

The development of OSSI:SOLAR is spearheaded by Dr. Mabel Matthews, Higher Education Manager for the NASA Office of Education.

The functional objectives of OSSI:SOLAR are:

1. Provide a single point-of-entry for students seeking NASA internships, fellowships and scholarships.
2. Enhance national branding of NASA's internship/fellowship opportunities.
3. Increase participation of all types of Higher Education institutions through the use of Broker-Facilitator Corps to recruit and assist students in applying for internships/fellowships, in addressing retention issues, and in developing career strategies.
4. Standardize the selection process.
5. Enhance communication, participation and collaboration between scientists and engineers and funding source managers/coordinators for internships/fellowships.
6. Increase the workforce pipeline of former NASA interns/fellows.

Roles of Space Grant and other Participants

- When students enter the system they can select up to 15 opportunities.
- Space Grant representatives will receive a list of students from their jurisdiction who have applied.
- Space Grants indicate whether each applicant is "OK to fund," "Not OK to fund," or "Possible."
- Space Grants have the option of reserving a certain number of funding 'slots' at various Centers. Slot allocation is *not* required.

Summary of Process

There are three major steps in the process:

1. Set up: Establishing each Space Grant Consortium and Users in the system
2. Student application review: Space Grant Users view student applications and indicate funding status
3. Funding source assignment: Centers contact students marked as "OK to fund" by Space Grant, and extend offers to those students

For summer 2011 only parts of the process are functional and there are workarounds outside of the system

Communications with Space Grants

- OSSI:SOLAR team sent contact information for each Space Grant Consortium User to each Center Funding Source Coordinator (sent: 3/4/11)
- Diane DeTroye sent contact information for the Center Funding Source Coordinator(s) to each Space Grant Consortium User (sent: 3/5/11)
- "Rules of Engagement" – Centers have been instructed to not contact Space Grant regarding students until March 5, 2011

Timeline

- March 15 is the deadline for student applications
- May 31 – NASA and Space Grant Consortia complete reviews – offers extended to students
- Students have five business days to respond to offers

26. Regional Highlights and Updates on Fall 2011 Regional Meetings and Dates

- Mid-Atlantic Region (**Dick Henry**, MD)
 - 2011 New Jersey, Nov. 2–4, 2011
- Western Region (**Denise Thorsen**, AK)
 - 2011 Fairbanks, AK, Aug. 25–27, 2011
 - 2013 tentatively Colorado
 - also announced Small Payload Rideshare Conference sponsored by Alaska Aerospace Corporation (June 7–9, 2011)
- Northeast Region (**David Bartlett**, NH)
 - 2011 Portsmouth, NH, June 3–4, 2011
- Southeast Region (**Jaydeep Mukherjee**, FL)
 - 2011 Raleigh, NC (Research Triangle Park), Sept. 9–10, 2011
 - special focus on linking K-12 education and STEM industry
 - also provided recent highlights from the region
 - Georgia Space Grant student received Presidential Award for mentoring
 - Alabama hosted a STEM Education Summit in cooperation with the Alabama Department of Education
 - Auburn Space Grant students are scheduled for a cubesat launch in October
 - Florida Space Grant students have two payloads planned for a UNESCO/Russian launch
 - a Louisiana school district is participating in the next Shuttle mission
- Great Midwest Region (**Stephen Haug**, MO)
 - 2011 Champaign, IL, Nov. 4–5, 2011
 - Fathi Finaish (MO) will serve as new chair for the region
 - plans are under discussion for a regional rocket competition

27. Announcements

The Council acknowledged the pending retirements of two directors:

- David Bartlett (NH)
- Mike Wiskerchen (CA)

Adjourn at 12:07 pm