Minutes of the
National Council of Space Grant Directors' Spring Meeting

Arlington, Virginia, February 27 – March 1, 2014

Day 1 - Thursday, February 27

The following meetings were held in the morning:
- Executive Committee Board Meeting
- National Space Grant Foundation Board Meeting

General Session

Council Business

1:00 (10) Welcome – ***Richard Berendzen***, DC Space Grant Consortium

Dr. Berendzen welcomed all attendees and thanked his DC team members Eric Day and Megan Kemble for their hard work in preparation for the meeting.

1:10 (15) Intro and Executive Committee Update – ***Yervant Terzian*** (NY SGC), Council Chair

Yervant thanked the DC consortium for their tremendous work preparing for this meeting. He reported on a meeting that he and a few DG directors had with NASA Education team, led by Roosevelt Johnson. He reported the meeting was positive. The solicitation for the community college Announcement of Opportunity should arrive in a couple weeks.

Yervant also brought up the issue of frequency of meetings, which was discussed at prior SG meetings. Fall 2014 - regional, Fall 2015 - Tucson, Arizona. Yervant reported that the AA for education at NASA, Leland Melvin, has decided to retire. Acting AA is Roosevelt Johnson.

We all received the 25th year anniversary booklet.

Yervant also discussed Search for Extraterrestrial Intelligence (SETI). Gave a history of SETI activities.

1:25 (10) Secretary and Treasurer's Report – ***Haim Baruh*** (NJ SGC), Council Secretary and ***Peter Sukanek*** (MS SGC), Council Treasurer

The secretary's report, to which the treasurer's report was attached, was given on Saturday (due to lack of time on Thursday) and was unanimously approved.

1:35 (10) Nominating Committee Update – ***Bill Garrard*** (MN SGC), Nominating Committee Chair

Dr. Garrard could not be at the meeting but he emailed the information prior to the meeting. Elections were held on Friday.

NASA Welcome

1:45 (15) Welcome – ***Roosevelt Johnson,*** Acting NASA Associate Administrator for Education

- Dr. Johnson began by praising the activities of Space Grant. He talked about the NASA family and NASA Education Office family. Stature of Space Grant is unparalleled.
- Commitment from Dr. Johnson and Dr. Allen to improve communication between NASA Education and Space Grant consortia. Commitment to greater transparency. Dr. Johnson believes in alliances and progress can be made primarily through alliances. Space Grant community is very familiar with alliances. He prefers collaborations over adversarial positions.

- He wants to have Space Grant promoted more proactively. Telling people in and out of government our story. Data collection is very important. The SG community should do its share by contributing information to NASA Education to help everyone tell our story better.
- Mr. Johnson would like to see a better integrations of Space Grant and EPSCOR. Two bodies working together makes programs stronger in the eye of the federal government.
- Dr. Johnson would like to see zealous advocacy of Space Grant. He wants everyone working with Space Grant and EPSCOR to enjoy what we are doing.

Invited Talk

2:00 (45) Space Launch: Current Issues – ***Antonio L. Elias,*** Executive Vice President and Chief Technical Officer, Orbital Sciences Corporation

- Dr. Elias talked about his experience that led him to the Orbital Science Corporation. He talked about the company's strong presence in Northern Virginia.
- He said that space launch costs a lot of money. Always looking for a lower-cost and more efficient launch system.
- Three mortal enemies of space launch:
  - Temptation to compare aviation with aerospace. One Anteres rocket uses the power of three nuclear power plants. A 747 uses 117 megawatts during cruise - Anteres uses 100 times more power.
  - Reusability. A 1972 study analyzed how many shuttle flights would justify reusability. 600-732 was the answer they came up with.
  - Technological advances in electronics. Moore's law. Propulsion technology has not advanced at that pace. Peaks in specific impulse has reached a plateau in 1981 and not much advances after that. On the structures side, there is not much improvement from 1957, when considering mass fraction as a measure.
- Can we combine technologies to improve things?
- Cost of launch per mass as a measure. Arianne (French) seems to do well.
- Worldwide launch attempts increased until 1974, plateau till 1984, declined during 1984 - 2004, and we now are in a recovery mode. More launches lead to lower failure rates.
- According to a study, 50-60 launches a year is best for improvement of technology and reusability and experience. Lowering the launch cost will not increase demand for launch. Cost of launch is a small portion of the overall cost of doing business with that launch.

2:45 (20) **Coffee Break and Networking**

Space Grant Student Presentations I

3:05 (15) A Glimpse into the Past: Yardangs on Mars – ***Angela Dapremont***, College of Charleston (SC SGC)

- Gale crater (where Curiosity rover landed) yardangs and also in Medussae Fossage formations.
- There were four candidate sites to select landing sites. 145 km in diameter.
- Yardang - wind carved formations.
- She showed pictures of yardangs in China. Gale crater also has yardangs and this is what Ms. Dapremont analyzed. She discussed differences in the Gale and Medussae Fossage formations. Research done at Johnson Space Center.

3:20 (15) Probing the Origin of the Universe with the EBEX Balloon-Borne Telescope – ***Kate Raach***, Univ. of Minnesota (MN SGC)

- Most of research was conducted in Antarctica.
- Early universe was a cosmic microwave. 1st stars after 500 million years. CMB is polarized.
- EBEX - a balloon borne telescope that studies polarization of CMB. Operates at 120,000 ft altitude. 140 m across. Detectors on EBEX consist seven wafers with 140 detectors on each wafer. Central wafer is hexagonal.

- First flight was successful, data was recovered in 2013, analysis currently in progress.

3:35 (15) From the Newsroom to the Hangar: One Woman's Story of Retooling Her Life for a New Career in Aviation – ***Bettina Edelstein***, Burlington Technical Center (VT SGC)

- Ms. Edelstein told how she got into aviation. She was working in the NY Times, doing editing. She did not have an idea of what she was doing. However, she had a pilot license. She moved to Vermont and took up becoming an aircraft mechanics.
- Very few women are aircraft mechanics. Less than 3%.
- She likes the idea of technical schools, which combine technology background and hands-on experience.
- She has worked on a large range of aircraft as well as aircraft parts. She now has a Pratt and Whitney scholarship.
- Her goal is to find a position that combines her technical skills and prior communication skills. She also is writing a book on her experiences.

Diversity

3:50 (10) STEM and the Future Workforce: The Messenger Matters – ***B. Chad Starks***, Delaware State University (sponsored by DE SGC)

- Delaware was told by NASA HQ to improve its recruitment of minority students into space Grant and that is how Dr. Chad Starks became affiliated with Delaware SGC.
- Chad is not a STEM professor; he is in sociology. While he was a graduate student in U Delaware, he began with a few faculty a minority student retention and encouragement program.
- He asked how many people in the audience have had an African American professor. Few hands were raised.
- He talked about his family experience and experience as a student.
- What can we do? More Ph.D.s in STEM, sociological perspective, step outside your comfort zone, ethic of care. He challenged us to be the messenger.

Space Grant/EPSCoR Success Story

4:00 (30) Creating a Human Spaceflight Research Infrastructure in North Dakota – ***Pablo de León*** and ***Travis Nelson***, University of North Dakota (sponsored by ND SGC)

- Dr. de Leon came to UND about eight years go. His research is on human space flight.
- He established a human spaceflight laboratory in 2005 with ND Space Grant support. He is involved with space suit research and in developing hands-on experience for UND students.
- They began with developing a space suit. NASA suits are very expensive and ware not available to them. So they had to develop their own.
- The suit was tested at NASA Ames in their suit testing facilities. NASA scientists collaborated with them, as they tested the suits all over the world, including Antarctica.
- They then built another prototype called NDX-2. They also built an inflatable habitat for use in space, as well as a rover for space use. The two connect to each other.
- Travis Nelson, who is a graduate student is psychology, presented his experiences in 10 day testing of the habitat.
- Three person crew. Data collected on health indicators, heart rate, blood pressure, respiration rate, food and water consumption, as well as chamber temperature and pressure. Also simulated data collected, such as soil samples.
- After the successful 10-day test, the habitat is being enlarged and extended by adding different modules.

Invited Talk

4:30 (45) The Crowded Universe – ***Alan Boss***, Carnegie Institution for Science

- Dr. Boss is DTM at the Carnegie Institution. He talked about exoplanets.
- What has happened in the last 20 years as we look for planets outside our solar system.

- Hubble is not designed to take pictures of distant planets. The sun has its own wobble, as it rotates about the center of mass of the entire system. This creates a lot of problems as we wish to take pictures.
- The technology of taking pictures based on the Doppler effect. 30% of solar-type stars have super earths. That is a huge fraction. Probably not habitable, but still a very high fraction.
- Dr. Boss then talked about planetary transits. One was found in 2000. He also talked about gravitational microlensing. Light from background lensed star gets bent by the foreground lensing star. First detected in 2004. Microlensing people have not fund as many planets as they were expecting to find.
- Latest research (2012) indicates that 62% of solar stars may have super plants. Kepler mission, since 2009, determines earth-size planets, to find their size and orbital period.
- Kepler ran for four years before it partially failed due to failure of reaction wheels. Still providing data, but it is not as maneuverable as before.
- First planet found by Kepler is 1.42 times radius of earth, orbital period is 0.84 days. Mass about 8 times mass of earth. As of June 2010 there are 312 candidates of planets. As of Dec. 2011, there were 2400 candidates, and as of January 2014, 3600.
- NASA is planning a TPF (terrestrial planet finder), a large telescope that is planned for a 2020 launch (if funds are available).

National Space Grant Foundation Business

5:15 (20) Foundation Updates and Treasurer's Report – ***Peter Sukanek*** (MS SGC), NSGF President, and ***Angela Des Jardins*** (MT SGC) with ***Kerry Kearney***, Merrill Lynch

Angela Des Jardins gave the financial advisor's report. About 1.4M invested, investment is about 70% in stock, 14% bonds, 16% in alternative investments (gold, real estate, ...) About 9% a year increase in value on average.

Day 2 - Friday, February 28

Invited Talk

8:35 (45) New Views of Exoplanets from NASA's Kepler Mission – ***Daniel Fabrycky***, University of Chicago

- Statistics are coming from the Kepler mission. We can classify planets based on their composition, which is related to their distances. A lot if planets are in resonance with each other.
- Dr. Fabrycky discussed the Kepler (2009-2013) mission. Photometry of of 150,000 stars. He showed an orrery of planets and their motions. Recent announcement on 2/26/14 of 715 newly verified planets. An interesting observation is that the planets discovered for the same star orbit on the same plane.
- Can we tell from Kepler data the full architecture of the planets? Size, mass, number, eccentricities, inclinations. To get answers, we look at transits and also radial velocities. New technique: transit timing variation. Looks at orbital timescales and what happens when different planets orbits become close to each other and they affect each other's gravitational pull. This phenomenon repeats periodically and is called orbital resonance and it can be used to ascertain planet properties.
- Most systems found are like a super-Earth or a mini-Neptune. Dr Fabrycky showed a NASA animation of Kepler-11 planetary system and how the planets orbit the sky. Also simulation of planetary resonances. Planets can kick each other out of orbit due to these resonances. Gas giants can have huge eccentricities or hug their stars.
- Dr. Fabrycky also talked about binary stars. The planets and stars can eclipse each other. He discussed the properties of Alpha Centauri, which is four light years away.
- There is a huge diversity of planetary systems. Planets are common outside our Solar System. Even planets whose orbital rotation is in the opposite direction of their star's rotation
- Dr. Fabrycky also mentioned opportunities for student projects. Data is publicly available. Please look at nxsci.caltech.edu archive.stsci.edu/kepler

NASA Program Updates

9:20 (30) NASA Office of Education Program Updates – ***Lenell Allen*** and NASA Headquarters Space Grant Staff

- What is new at NASA: EarthNow (iPhone app), OSIRIS-REx, ORION EFT-1, five NASA missions to be launched into space
- Graduate Education CoSTEM Interagency Working Group. Dr. Allen and Dr. Lisa Willis are the leads. Priority areas. One stop shopping portal - graduate fellowships, develop metrics, work with outside stakeholders, bring students funded by different agencies together (AAAS)
- Office of Education Lines of Business (STEM engagement, educator professional development, institutional engagement, internships, fellowships, scholarships), Space Grant Objectives, Co-STEM Priority Areas (100,000 new STEM teachers, 50% increase in authentic STEM experience, 1M additional STEM college degrees, increase underrepresented, design graduate education for tomorrow's STEM workforce). We should all know these.
- SG Funding: Please see Dr. Allen's presentation for numbers and statistics for all activities
- STEM Engagement: 244 Public Education, 679 Pre-college, 687 Higher education, 166 new courses, 222 revised courses
- Educator Professional Development: Please see Dr. Allen's slides for details
- Internships: 518 internships, 191 at NASA centers, $2.1 as internship awards, 100+ fields of study
- Please look at the presentation on longitudinally tracked students
- 533 graduate fellowships (42 minority, 39% female)
- Fiscal climate FY 14 - 114 M for NASA Education
- FY 14 Omnibus package: SG funding language states that other than base amounts, all awards will be made available on a competitive basis
- Competition for community colleges - expected to be announced on NSPIRES by March 7
- Base Awards (after the five year awards end) : to be released in August 2014, there will be a two year period of performance
- National evaluation: External, third-party evaluation
- Budgets and Procurement - get to know LaTeicia Durham and Theresa Stanley (Stennis)
- More on coordination session from Dr. Teague
- Space Grant messaging: ongoing communication efforts - more at coordination session.

9:50 (20) **Coffee Break and Networking**

Space Grant Programs and Partnerships

10:10 (15) University Scale Centennial Challenges – ***Larry Cooper***, NASA Headquarters

- Universities are potential challenge competitors but most have not been participating. So NASA has been tailoring its approaches to make these challenges more appealing to universities. Continuity is an issue. Thinking of adapting a DARPA model.
- Looking to have open competitions with two tracks - open track and closed track. Looking for candidate concepts and looking to start late FY14.
- Dr. Cooper is asking us: what is your challenge idea? How can we appeal to many universities, ideas achievable in near term, that public would find interesting. Please see presentation for contact information.
- Some ideas: Europa ice challenge (penetrate the very thick, low temperature ice on Europa and analyze below), space race (ground based robotics demonstrating autonomous detection), aerial robotic explorers (fly over Mars surface), micro lander challenge (vertical take-off, vertical landing less than 25 kg), earth vehicle landing shock attenuation (impact deceleration), precision lander challenge (without GPs, land autonomously, dropped from 20,000 ft), Mars ascent vehicle challenge (autonomous operation, 6 m/s terminal velocity), Venus thermal challenge (thermal control subsystem development, survival of electronics.
- Feel free to send ideas. hq-stmd-centennialchallenges@mail.nasa.gov

10:25 (15) Nationwide Network of Total Solar Eclipse High Altitude Balloon Flights – ***Angela Des Jardins***, MT SGC, ***Chris Koehler***, CO SGC, and ***Luke Flynn*** HI SGC

- Total solar eclipses are very rare occurrences. Five over USA in last 50 years and only a small portion of the country can see it. ISS was able to picture one in 2006 - spectacular view. Viewing a total eclipse from a balloon was filmed in Australia. Angela showed a YouTube video of what the balloon filmed.
- There will be four total eclipses until 2050. The idea is to have collaborative launches of balloons to observe the next total eclipse in August 21, 2017. From Oregon to sSouth Carolina.
- Learning opportunity, workforce development, science and technology, collaborations and partnerships.
- Timeline presented (see presentation for details)
- Costs: $15-30K per year for two years. Costs may vary due to travel costs. Expect to discuss results at the 2017 national meeting.

10:40 (5) A 5-Minute RockOn 2014 Update – ***Chris Koehler***, CO SGC

- Chris gave quotes from workshop participants and how Rock-On changed their lives. Register at
- spacegrant.colorado.edu/rockon
- $799 per person; please register by May 2, 2014.
- Roc-On participants build a rocket payload in three days. Actual building, real-world experience, 78 payloads 95% success in launches.

10:45 (15) What a Trip! Five Years of Suborbital Launches with RockSat-C – ***John Helferty*** and ***Taylor Million***, Temple University (sponsored by PA SGC)

- Taylor Million, student at Temple University, made the presentation. She started attending Rock-Sat in 2009. Integration into Temple university curriculum, courses and design projects. Also opening of environmental systems lab. Ms. Million showed pictures of their activities. Discussed how Rock-On has changed her life.
- In 2010 a spring loaded payload was designed, as well as a piezoelectric vibration suppression system. In 2011 students studied an IMU. In 2012 biological acquisition unit was developed. Filter system in 2013 and 2014 for air sample collection at different altitudes. Greenhouse gas analysis.
- Overall, Rock-Sat has had a tremendous impact on students, faculty and curriculum at Temple University. Currently developing a pipeline for 1st and 2nd year student participation.

11:00 (10) Fall 2014 Space Grant Regional Meeting Announcements
Postponed to Saturday.

Space Grant Precollege and Informal Education Programs

11:10 (20) STEM Education in Formal and Informal Settings: The REAL Way – ***Merryn Cole***, University of Kentucky (sponsored by KY SGC)

- Ms. Cole is Ph.D. student in STEM education. She developed curriculum on Realistic Exploration in Astronomical Learning program for K-12 (curriculum was intended for 6th grade students, primarily underperforming ones, but they ended up getting students from all grades).
  - This is a 4-9 weeks program, pre and post assignments, videotaped lessons, student work. Eight lessons: moon, measuring distance in sky, location on earth, locating objects in the sky, global features of the Moon, Moon's surface, crater size, scaling of Earth/Moon/Mars NASA activity.
  - Five additional lessons: geologically active planets, surface activity on planets and moons, crater number density, lessons on Mars, Martian surface exploration.
  - Daily moon observation manuals, stellarium activity, Moon Finale, student projects
  - Assessments by questionnaires.

11:30 (15) Nebraska Education Space Ambassadors (NESA) – ***Pam Petersen,*** York Public Schools and ***Derrick Nero,*** Omaha Public Schools (sponsored by NE SGC)

In the past, there were issues with educator professional development in Nebraska. NeSGC stepped in and developed a space ambassador program. Credit to Michaela Lucas, program coordinator for Nebraska SGC, for coming up with the idea. 13 teachers as ambassadors, who impacted 401 teachers and 847 students, with 24 different presentations across Nebraska. Also, the teachers are developing engineering

curricula for 7th graders. Involvement of students and their families. Partnerships with organizations and museums have been very fruitful. Making learning fun by engaging students and having fun.

Due to length of presentations, this presentation was moved to after lunch.

11:45 (15) Collaborations Between Space Grant Lead Institutions and NCESSE / Clarke Institute: Successes and New Opportunities – ***Jeff Goldstein***, National Center for Earth and Space Science Education

- SSEP is a program of National Center for Earth and Space Science Education and Arthur C. Clarke Institute for Space Education. Partnership with NanoRacks LLC, which works with NASA as part of utilization of ISS as a national laboratory.
- Mr. Goldstein explained the procedure for participation. Competitive proposals for payloads. Over 36,000 students have participated since June, 2010. Microgravity flight laboratory and payload launched to ISS. 8 opportunities, 68 communities, 93 community programs, 600 schools involved, 5090 proposals received. 58 experiments flown, 23 currently flying, 13 more in Spring 2014, 19 more in Fall 2014.
- 24 SG consortia have so far participated. Voyage Exhibition is their latest project and is being installed cross the U.S. The National Mall exhibition renovated in 2013.

Afternoon Session

Space Grant Student Presentations II

1:10 (15) The Johns Hopkins University Rocketry Team (The Hopkinauts) – ***Marie Hepfer***, Johns Hopkins Univ. (MD SGC)

Ms. Hepfer began by introducing her team members, all undergraduates. They went to Rock On and then on to Rock-Sat X. They proposed an interesting bacteria experience. Their experiences took them to visit industry and rocket manufacturers. The students that have graduated have gone on to graduate school in aerospace and to STEM careers.

1:25 (15) Active Flight Load Alleviation Using Segmented Trailing Edge Wings on a Small UAS – ***Benjamin Martins***, Univ. of California, San Diego (CA SGC)

- Mr. Martins is a second year doctoral student. He is working on redistributing loading on aircraft more efficiently.
- He split control surfaces into smaller multiple pieces. Also, made the control surfaces morph into a flexible wing.
- They built a small UAS platform to do experiments. Measuring strain by optical fibers. Make control surfaces into smaller segments for more controllability. Aircraft they built has a 12 m span. Continuous grated fiber. 86 ft of fiber for 2000 strain measurements. Fiber rosettes for shape, displacement, twist and principal strain calculations. Segmented control surfaces.
- Static and dynamic testing were conducted. Test flights were conducted at Dryden. Mr. Martins was able to minimize tip deflection with the controls on.

1:40 (15) AIRSPACES: Air-Propelled Instrumented Robotic Sensory Platform for Assateague Coastline Environmental Studies – ***Daniel Villalobos***, Univ. of Maryland (MD SGC)

- Mr. Villalobos began by describing the ecological problem. Formation of nuisance algae species, which all have a damaging effect on water quality. he then described the diverse ecosystem of Assateague Coastal Bay.
- Objectives: to design autonomous marine vehicles to record data and to analyze the data. Catamaran type. Reinforced fiberglass, plywood for rigidity. All components can readily be purchased from local vendors. 18 lb total weight and the size is 4 by 2 by 2 ft, 30 lb payload, air propelled, easy to dismantle and transport. Battery operated propellers and servo controlled rudder. Depth sensor.
- Data collected included depth, dissolved oxygen. Ideal for adopting for classroom use, assisting efforts by other organization to measure water measurements.

Consortium Coordination

1:55 (75) Consortium Coordination Session – ***Lenell Allen*** and NASA Headquarters Space Grant Staff, Directors, and Coordinators

Dr. Allen introduced her staff, who then made presentations pertinent to their lines of work.

- **Patricia Shaffer**: Works for the Infrastructure Division at NASA. Subject matter experts to NASA Office of Education.
- Launch of 5 year evaluation 2010-2014. Previous study was based on looking at individual SG consortia. This time they will look at individual consortia as well as the overall SG program. Will build on past 5-year performances.
- Look at compliance with federal law, program management techniques, application and award process, consortium-level and overall impact, what is highly effective.
- Evaluation rolled out in phases.
  - 1) Evaluation planning. Evaluation questions, data sources, past SG evaluations. Data quality assessment. Bring in external evaluator.
  - 2) Data collection and analysis. Data from NASA and from stakeholders. Anticipate continuing processes from previous evaluations.
  - 3) Evaluation
- Program improvement and accountability, to tell the SG story using data, build on past evaluations.
- Phase 1 next steps: external evaluator, representatives from SG to consult with evaluator, evaluation questions, follow ip with SG stakeholders, development of evaluation plan.
- **Michael Cherry**: OEPM reporting. He thanked us for our hard work. Hopefully, this time around things will be smoother. Please keep your security training up to date. Please fill out all fields in the data forms you fill out. May 16 is target date for post-management data.
- In Q&A, Vermont reported that they received authorization from students to provide permission. Concerns expressed about the target date.
- **LaTeicia Durham**: Described summary of awards and solicitations
  - 2010: Base, augmentation, Development Competition
  - 2011: Base, augmentation
  - 2012: Base (year 3 and some year 4) Initiated new process by forward funding to reduce obligations for 2013. This was the basis of how awards were made.
  - 2013: Base (year 4 and some year 5) Same process as previous year.
  - 2014: 13 base awards remaining. The rest have been made. Targeted opportunity for Community College and Technical School.
- New Space Grant Solicitation: External evaluation will not be done by the time we expect to receive the base awards. Dr. Allen said we should have the two-year solicitations in August.
- NCE will be accepted www. nssc.nasa.gov/nocostextension
- Pay attention to: budget revisions, labor costs, internal controls should be in place, monitor draw-down of funds, no de-obs/re-obs.
- **Theresa Stanley**: Education Grants Officer at NSSC.
- Complete proposed work, send reports in timely fashion, draw down in accordance with procedures, A-133 audit if you draw down more that $500,000 (see presentation for details)
- Prior approval rules: Please see presentation.
- Budget justification detail direct labor, indirect rates, travel, description of equipment, statements for subcontractor, supplies, publication costs, identify all other costs
- Unallowable: Alcohol, foreign research, no switching of grants, unreasonable travel expenses

- Website. Please keep sending information to include in NASA website.
- **Sasha Korobov**: Importance of communication. Telling your story. Twitter, WAR (Weekly Activity Report), NASA Express, Data Calls, Website.
- NASA Express. Information on opportunities of engagement. Followed by 20,000 Express subscribers, 23,600 educators, six million NASA followers
- No altering the meatball
- **Warfield Teague**: APD - narrative reports required 60 days prior to award anniversary. Read directions carefully. Cubesat selectees: RI, NM, MI, FL. Thank you DC for all your hard work. Thank you all.

Social Media and NASA Internship Discussions

3:30 (30) Panel Discussion: Space Grant Usage of Social Media (Moderator: ***Denise Thorsen***, AK SGC)

- Panelists: Denise Thorsen - Moderator, Raji Patel, Darren Hitt, Caitlin Nolby, Michael Rice
- Questions posed by Denise to SG consortia: why (for what purpose), what (types of social media), how effective, how do you promote, effort allocated to social media
- Why responses: Dissemination, promotion, tracking students were top 3 answers. 10% do not use.
- What responses: Facebook, Twitter, LinkedIn were top answers
- Effort: 1-2 hr a week, <1 hr, 2-3 hr were top answers

- Comments by Raji Patel: LinkedIn for tracking, Facebook for advertising activities, seminars, lectures, to show SG impact.
- Comments of Darren Hitt: Pros and cons of email, web, Twitter, LinkedIn (see presentation for details) He was told students do not use Facebook. He thinks Twitter serves SG goals best.
- Comments by Caitlin Nolby: ND uses Facebook and Twitter. Talked about the hashtag sign.
- Comments by Michael Rice: NC SG. He is mostly a volunteer, helping with social media. He sees social media as useful more for the younger generation.
- Most readers of Twitter are reading it out of a smart phone. Discussion on whether social media will improve diversity. Panelists mostly agree that it wold help diversity. Jeff Goldstein, in his program, has 11,000 followers.

4:00 (15) NASA Internships and the Future of the NASA Academies – ***Frank Six***, NASA MSFC and ***Brad Bailey***, NASA ARC

Frank Six and Dave Rosage made the presentation. Frank gave a history of the internships and academies. A survey was distributed. Pleas return survey Saturday, as we need to adjourn soon. Diane DeTroye said use OSSI. Frank proposed a procedure for evaluations. Approved by the directors.

Council and Foundation Business

4:15 (15) Space Grant Council and Foundation Elections – ***James Flaten*** for ***Bill Garrard*** (MN SGC), Nominating Committee Chair

Chair and Executive Council and Nominating Committee elections were held.

Day 3 - Saturday, March 1

8:30 (05) Announcements and Updates

The results of the Executive Committee elections were announced. Steve Ruffin (GA SGC) was elected as incoming chair and Luke Flynn (HI SGC), Chris Koehler (CO SGC), Denise Thorsen (AK SGC) were elected to two-year terms.

Invited Talk

8:35 (45) A New "Sputnik" Moment: Are We Prepared for Space Exploration in the 21st Century? – ***Bonnie J. Dunbar***, Director, University of Houston STEM Center

- Dr. Dunbar, as part of her distinguished career, served on the International Space Station (ISS). She lamented the lack of interest on the part of the general public and elected officials in space research and in the ISS. She talked about a smartphone app that can be used to track the position of the ISS and look at it with binoculars.
- Dr. Dunbar talked about her upbringing in rural Washington State and as someone whose family had little background in STEM, she was attracted to STEM and pursued a career in STEM. She openly wandered whether here will be another Sputnik moment to energize the nation to develop now programs for space research and travel and

Mission Directorate Working Groups and Working Group Chair Reports
9:20 (45) Mission Directorate Working Group breakouts and reports
Aeronautics Research: Haim Baruh (NJ SGC) reported. The working group has made attempts to reach out to aviation schools and aviation technical colleges with very limited success. Haim Baruh and Michaela Lucas (NE SGC) are co-chairs.

Human Exploration and Operations: Barrett Caldwell reported. The working group discussed data gathering techniques, and working with the FAA. Jaydeep Mukherjee will continue to work on these issues. Barrett Caldwell was reelected as chair.

Science: Terry Teays (MD SGC) reported. The working group has discussed ways to obtain broader diversity of interns and placement of interns, including at non-NASA facilities. Terry Teays and Cass Runyon (SC SGC) were selected co-chairs.

Space Technology: Denise Thorsen (AK SGC) reported. The working group selected Darren Hitt (VT SGC) as the new chair and made plans for Darren, Denise and Luke Flynn to visit HQ this summer. Denise will follow through with the surveying SG directors about how we support STMD and do strategic planning and find out what Space Grant directors want to do with space technology.

10:25 (20) **Coffee Break and Networking**

SG Regional Breakouts
10:45 (45) Space Grant Regional Breakout Sessions and Regional Highlights

Great Midwestern: Charisse Buising (IA SGC) reported. The Great Midwestern regional meeting will be held on October 10-11, 2014. The meeting will primarily discuss how to better attract minority and underserved groups to STEM.

Mid-Atlantic: Dick Henry (MD SGC) reported. The Mid-Atlantic regional meeting will be held Sept. 25-25, 2014, in Colonial Williamsburg. There will be a tour of NASA Langley.

Northeast: Terry Shehata (ME SGC) reported. The Northeast regional meeting will be held October 16-18, 2014 in Massachusetts. The topic will be integrated collaboration with community colleges.

Southeastern: Jaydeep Mukherjee (FL SGC) reported. Their regional meeting will be October 23-24, 2014, in Cocoa Beach, Florida. There will be representatives from Marshall, Kennedy and Space X. The Southeastern states will make presentations to these leads and explore collaboration opportunities.

Western: Chris Koehler (CO SGC) reported. Their regional meeting will be October 9-10. 2014, in Boulder, Colorado. There will be hands-on activities with electronics, discussions on best practices, and group impact.

11:50 (10) Meeting conclusion. Everyone thanked DC SGC wholeheartedly for putting together yet another successful meeting. We also thanked Yervant Terzian for his outstanding service as chair for the last two years and welcomed Steve Ruffin as the incoming chair.

National Council of Space Grant Directors

Treasurer's Report
February 2014

ON DEPOSIT WITH NSGF
(As of 31 Dec 2013)

	ACTIVITY	PREVIOUS BALANCE	CURRENT AMOUNT
Endowment		**$8,985.04**	
Income	Net Interest/Earnings		$1226.69
Total Endowment			**$10,211.73**
Expendable		**$20,956.67**	
Income	Net Interest/Earnings		$1,227.30
	Meeting Fees (F13)		$3,431.33
	Reimbursement		$6,155.00
	Registration Cancellation		$100.00
	Correction		$3.60
Expenses	Meeting Expense (F13)		($221.20)
	Meeting Loss (F13)		($3,786.00)
	Gift		($115.80)
	Change in Market Value		($263.02)
Total Expendable			**$27,487.88**

Respectfully Submitted,

Peter C. Sukanek
Treasurer

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