

Minutes of National Council of Space Grant Directors' Spring Meeting

February 26 – February 28, 2015, Arlington, Va.

General Session: Day 1, Thursday, February 26, 2015

Council Business

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

Steve Ruffin opened the meeting and welcomed everyone. He is excited about the power of our community. Richard Berendzen is ill and we all wish him a speedy and complete recovery. Yervant is also unable to meeting. Steve acknowledged several SG leaders who have given him a lot of guidance, including Yervant Terzian and Chris Koehler.

Additions to the SG family. New director in Mississippi, Nathan Murray. New director in Ohio, P. Ruby Mawasha. New director in Connecticut, Hisham Alnajjar. Also new director in Wisconsin, Kevin Crosby.

Agenda is full, number of remarkable talks to follow.

1:10 (15) Intro and Executive Committee Update – **Stephen Ruffin** (GA SGC), Council Chair
Discussed above.

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

Haim Baruh presented the minutes, to which the treasurer's report was appended. Approved unanimously.

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

Bill Garrard began with the Nominating Committee report. Two vacancies on the Nominating Committee. Several vacancies on Excomm. Working groups select their own chairs. Alliance Board has four vacancies. Foundation has two vacancies. Bill then showed the slate of nominees for Excomm.

Space Grant Collaborative Programs

1:45 (15) **Peter Lawrie** and **Tom Drummond**, Orion's Quest (MI SGC) - Authentic Space-Based Research for Youth

Alec Gallimore, director of Michigan SGC, introduced the speakers. They are both retired principals. Their organization, Orion's Quest, is a 501c3 organization. Their goal is to encourage students to excel in math and science through space-based education. They are involved with authentic research and they collaborate with NASA Ames and several other organizations. Bio research (fruit flies, spiders, microbes, pathogens) in space. They have programs for all levels of K-12. Public as well as private and charter schools.

In their program, students communicate with researchers on the ISS. Downlink from ISS classrooms. Outstanding testimonials from participants.

2:00 (15) **Amy Jameson**, Dater High School, and **Kelly Cohen**, University of Cincinnati
(OH SGC) - University of Cincinnati Flight Camp for Middle & High School

Ruby Mawasha, director of Ohio SGC, introduced the speakers. Amy Jameson is a Chemistry, Physics, Anatomy & Physiology teacher at Gilbert A. Dater High School (urban high school) in Cincinnati, and Kelly Cohen is a Professor of Aerospace Engineering in the School of Aerospace Systems at the University of Cincinnati. Partnership between the two speakers began at an NSF STEM meeting. Flight camp pilot program, an extension of their previous collaboration. Goal is to positively impact urban student's attitudes towards STEM careers. The speakers used material from NASA and AIAA. Students from Cincinnati public schools participated. Summer camp idea was changed into after school program. Different programs were developed for middle school and for high school students. Flapping flyers built from inexpensive kits. Pink insulating foam carved into airfoils so they can carry a maximum payload. Students made movies of their designs and did poster presentations. Ms. Jameson showed one of the movies. Success stories involve students applying to aerospace study at UC.

Next step is to enlarge the program, recruit more teachers and reach more schools. Also organizing training for K-12 teachers.

2:15 (15) **Richard Johanboeke**, Project Manager, Robotic Mining Competition, NASA KSC

Steve Ruffin introduced the speaker, who has worked with several organizations. The speaker began with a film on developing in-situ resource harvesting. The motto is: Design it. Build it. Dig it.

Where are the resources on Mars? Heating the regolith to 1350^o C melts it and makes it suitable for building material. Regolith can also be made into heat shields.

53 colleges in the mining competition. Participants are given specifications. Excavate, transport and deposit 10 kg of regolith to a collector bin in 10 minutes. Joe Cosmo award for excellence for \$5,000. Cost to teams is about \$20,000. SG consortia support, as well as foundations, colleges, donations. 26% of participating schools are MSIs.

NASA Education Updates

2:30 (45) **Donald James**, NASA Associate Administrator for Education
Presentation (25) and Q&A (20)

Steve Ruffin introduced the speaker. NASA AA for Education since Sept. 8, 2014. Prior to his NASA HQ position, he was director of education at NASA Ames.

Steve and Mr. James have known each other for quite a while. Mr. James talked about his background and how he came to join NASA and became involved with education. In 1986, while was in California, he heard about the Challenger disaster. What impressed him was that children, as well as adults, wanted to connect with NASA. The response of the public was overwhelming.

Mr. James said that we are in the life transformation business. He was giving a talk at UC Berkeley and a student came to him and told him how she was impressed with and inspired by him when Mr. James once came to her school. She decided to go into engineering at Berkeley.

The Federal government is involved with evaluating STEM education programs across governmental agencies. EDA, NSF, ... The Co-STEM activity arose from those meetings. Four lines of business. New task force for NASA advisory committee. He described anecdotes that there is a perception that NASA is diminishing its activities. We need to all counter this perception.

NASA is ranked very highly as a good place to work. What NASA does, transforms lives in ways we don't always know. Mr. James was pleasantly surprised by the number of people whose lives have been changed by NASA activities.

Q&A section of the talk.

John Gregory asked about FY2015 funds. Appropriation is \$40MM and consortia are receiving their base award as before, leaving about \$13MM as unobligated funds. What will happen to those funds?

A: Lenell Allen will respond to that.

Tim Swindle: Will there be support to non-STEM majors? A. Such people are of interest to NASA. But we need to measure the numbers of students we engage. He is happy to look at the situation more closely.

Bill Garrard: U. of Minnesota has a program with JSC for designing space suits together with UMN's school of design. Would such a program survive? A. We need to be flexible for definitions. Let us be smart and not be rigid.

Chris Koehler said he also sees the perception that NASA is dying. He wants to fight that perception. When we look at year 2 and 3 budgets they are much lower. Why and what is the logic? A. Congress is very invested in Space Grant. He is willing to work with us to promote our agenda. Mr. James realizes that NASA has more to offer in STEM than other programs and is willing to pursue larger support for NASA education.

3:15 (15) Coffee Break and Networking

Space Grant Student Presentations

3:30 (15) **Jason Pearl** – University of Vermont (VT SGC) - Numerical Design of Plug Nozzle for Micropropulsion Applications

Very technical talk. Look at presentation at the Foundation web site for more details.

3:45 (15) **Iverson Bell**, University of Michigan (MI SGC) - Exploring Miniature Electrodynamic Tethers to Provide Propulsion and Other Capabilities to Picosatellites and Femtosatellites
Alec Gallimore, MI director, introduced the speaker. Mr. Bell is finishing his Ph.D. Next year. B.S. degree from Howard University. He is working on the design of emerging type of spacecraft. Satellite with an electrodynamic tether.

Next generation of satellites will be very small. Picosatellites (0.1-1 kg) and Femtosatellites. <100 gm
Like a modern smartphone. Small size means easier launch and in large numbers. Study of large-scale phenomena. For example, disaster response.

Electrodynamic tether is an advanced propulsion technology. In essence, a large conducting wire. Provide maneuverability and extension of mission life. Can function as scientific instruments and antennae. Simulate spacecraft in orbit. Simulation involves generation of plasma. He is building a miniature experiment in space.

4:00 (15) **Carly Sandin**, and **Joel Torres**, South Dakota School of Mines & Technology (SD SCG)
- Space Grant's Impact on Education: NASA, Industry, and Academic Experiences

Tom Durkin introduced the speakers. They are both SG fellows. Carly Sandin is currently pursuing a masters degree at University of Illinois. She talked about the Moonrockers team. Competed in the space robotics competition. Also SEDS group in South Dakota for space exploration. She did internships at NASA Johnson SFC and at Boeing. She is very grateful for SG for providing her with support throughout her career.

Joel Torres is a graduate student in South Dakota School of Mines and Technology. He has been as intern at Goddard with SG support. He has been working on the global precipitation mission. He described the data acquisition network at wallops for this purpose.

Micro scale network, optical disprove tears. Investigated snowfall variability, velocity, and snow density. He will be applying for Ph.D. opportunities after graduation.

Invited Talk

4:15 (30) **Jo Handelsman**, Associate Director for Science,
White House Office of Science and Technology Policy (OSTP)

- Steve Ruffin introduced the speaker. Dr. Handelsman is associate director at OSTP and advises the president. She is a chaired professor of microbiology at Yale. Also worked at U. Wisconsin as professor of plant biology. Involved with several centers throughout her career. Expert in science education.
- She is a big fan of space science. She has developed familiarity with the SG program and has been very impressed with it. Do this nationwide and provide the inspiration. She stated that President Obama is very passionate about STEM education. The President recognizes that we need the scientists and technology and that we need the people who use the technology and also creates the application technology. Need for trained STEM students. The President is also very concerned with the shortage of STEM workers. Thousands of jobs go hunting for qualified employees.
- We are all aware of STEM students losing interest in STEM. Need to correct inadequateness in STEM education. Lack of diversity, race, gender, geography, age. The President is interested in increasing diversity. For example, females make 70% of college students but only 45% of STEM students.
- How do we accomplish the goal of diversity? The President has an all hands aboard approach. We must do our share in all areas. Need to nurture the spirit of creativity. Turn creativities into inspiration and inquiry. We are good at teaching skills but not so good at inspiration.
- Changes the White House is trying to make to STEM education of every level include: Developing more STEM teachers and STEM-focused schools. Research on the nature of learning. But that research is going on for quite a while and we know some of the results. Three issues of teaching, bias, and image of STEM in the media.
- Women and minorities have a higher propensity for relevance of what they are doing to society. The dearth of women in engineering continues without too much improvement. Our students do not understand the significance STEM in our lives.
- Active and engaged education is more effective than lecturing. How can we offer a research experience for every first year student? One tool is a research course. But it is mostly used for third or fourth year students. Looking to work with professional societies to implement such changes, especially research courses. We also need to address the inadequate math skills.
- People learn better when they have an intellectual and emotional interest in the topic. Most fundamental change is to move to an engagement-based approach. Research largely shows this. Active learning promotes both learning and engagement.
- Second area that is critical is the bias we bring to science and technology. Most people do not want to be prejudiced but we all have biases and prejudices. It has been shown repeatedly that male white students are perceived as better in STEM. Bias is not intentional and most people do not realize they are biased. Results of an experiment showed that: Female students were less likely to be hired, were viewed as less competent and hired at lower salaries than male employees. Bias in a buzzword and most people are unconscious about their biases.
- Third area is the image of science and technology. Most STEM images are handled by the media. The White House is working with the media. For example, the show *The Big Bang Theory* portrays scientists in a very negative way. Hollywood producers made a test where they asked female teenagers about which shows are popular with them. They came up with amazing ideas.
- A lively Q&A session followed.

4:45 (15) Council Elections, **Bill Garrard** (MN SGC), Nominating Committee Chair

5:00 (5) Announcements and Recap of Day 1

5:05 **Adjourn**

General Session: Day 2, Friday, February 28, 2015

NASA Space Grant Program Updates

8:35 (45) NASA Office of Education Program Updates – **Lenell Allen**, Director, Space Grant and EPSCoR Programs

Dr. Allen began by introducing her staff. Her first slide contained pictures of the student presenters.

Mike Cherry, LaTeicia Durham, Sonya Greene, senior program analyst, relatively new, Sasha Korobov, Jamie Sims, and Warfield Teague.

Space grant 3-year base award update, 2015 competitive awards (partnership with mission directorates) undergraduate student instrument project (USIP), involving hands-on research and design. 2-year award, \$200,000 per award, anticipated release date in April 2015, telecom in May. Presentation tomorrow by Kristen Erickson of SMD for more details.

Q&A. If we add the base budget and competitive solicitation, there is a lot of money left from the \$40 MM. Will it all go towards administrative expenses? A. Yes.

Research and Career Development, and NASA Headquarters Space Grant Staff Presentations
Presentation (25) and Q&A (20)

9:20 (30) Evaluation Planning – **Patricia Shaffer**, Acting Director, Office of Infrastructure Division and Evaluation Manager, NASA HQ and **Bernice Alston**, Paragon TEC

Dr. Shaffer introduced Bernice Alston and Ms. Yamashita.

Past evaluations: performance of state performance and internal evaluation led by NASA program team.

This evaluation: evaluation of state performance and external evaluation (new)

- Draft questions,
- Compliance with public laws,
- Program management practices,
- Program impact at consortium level and overall program impact,
- Challenges, barriers, and constraints to obtaining high-quality results.

Evaluation process. We are currently in the planning phase.

Phase 1. Community consultation, existing data sources, past SG evaluation rubrics, data quality assessment, evaluation planning

Phase 2. Data collection analysis. From NASA and other stakeholders. May continue some processes from previous evaluations. Will be shared by SG community for feedback.

Evaluation planning consists of 1) fully document current SG program model, 2) conduct an assessment of performance data, reporting and documentation, 3) prepare a design and plan for an external evaluation study

Paragon TEC team will provide technology services, education services, and communication services. They were established in 1996. Worked closely with NASA.

They looked at the 25 year Space Grant report, Perkins report, pertinent legislation, budget justifications, they interviewed NASA Office of education staff, reviewed all reports, data assessment methodology, 13 state outcomes, 7 evaluation questions. They found that there is wide diversity in how states allocate their funds to programs. Please look at presentation slides for more details.

Next steps include design of a plan for external evaluation study and making formal commendations for study. Phase 1 is expected to be over in April 2015. Followed by evaluation procurement. Phase 2 to be in 2nd quarter of 2016. Phase 3 will be in mid-2016, and release of solicitation by Oct. 2016.

Q&A session followed.

Bill Garrard: What are you doing to assess quality? A. Statistics they showed was aimed at measuring quality. Quality of labeling programs, say, fellowships. How do people define fellowships?

Bill reiterated that he did not see much in way of quality. A. They will take it under advisement.

Scott Tarry commented on the process. A. Begin with leaders, Mr. James, Steve Ruffin, Mark Fischer, and then they will set up criteria.

Wally Fowler: Issues with consistency. States define different things in different ways.

Majid Jaridi: It is an issue of definition. Maybe we can make it more consistent.

Mary Sandy: Is the leveraging of funds being considered in the evaluation and also the public-private partnerships. A. Not yet.

Please contact Pat Shaffer with concerns and suggestions.

Invited Talk

9:50 (40) **Jay Falker**, Program Executive, NASA Innovative Advanced Concepts (NIAC) Program

He is with Space Technology Mission Directorate. Introduced by Steve Ruffin.

- Why invest in Space Technology? Look at slides for a complete list,
- Four strategic themes. Go there, land there, live there, observe there,
- He showed a slide with a technology path to Mars,
- Portfolio consists of nine programs in three categories (see slide for details),
- Transformative and crosscutting technology breakthroughs,
- Pioneering concepts developing innovation community,
- Creating markets and growing innovation economy.

Large number of universities involved (128). See slides for more details.

Grants. All awards go to universities. Fellowships, early career faculty, early stage innovations. High risk, high payoff low TRL.

Game Changing Challenges, Smallsat technology challenges, centennial challenges, flight opportunities.

He showed the 2015 solicitation schedule (see slide for details).

Space Technology Research Grants

Total award up to \$74,000. For eligibility summary please see slides.

STTR. Small business technology transfer program. Three stage program (see slide for details)

NIAC is open to everyone. Exciting, unexplored, credible. Two phases of funding: first for \$100,000, second up to \$500,000.

Comment from Alec Gallimore. Get to know the NASA people first, which will lead to a successful proposal. Speaker said in some cases knowing the NASA people is not necessarily helpful.

10:45 (10) **Tim Swindle**, AZ SGC, Review of the Fall 2015 meeting

October 1-3, 2014, at Westin La Paloma. Reception at La Paloma Country Club. Possible tour to Kitt Peak National Observatory, Mt. Lemmon Sky Center, OSIRIS-REX Mission, Steward Observatory Mirror Lab, Biosphere 2, Arizona Sonora Desert Museum, Pima Air and Space Museum, Titan Missile Museum.

Easier to fly into Tucson. The resort is 100 miles from Phoenix; so flying into Tucson is better, as it is only 20 miles from airport. Resort does not have a shuttle.

10:30 (15) Coffee Break and Networking

Invited Talk

10:45 (30) **Kristen Erickson**, Director, Science Engagement and Partnerships - NASA HQ

Moved to 9:05 am Saturday

Space Grant Collaborative Programs

11:15 (15) **Emily Calandrelli**, Xploration Outer Space (WV SGC) - More than a TV Show: The Next Generation Space Community

Majid Jaridi introduced the speaker. She graduated in mechanical engineering from WVU. Went to MIT for grad study. She is very grateful to WV SG, who supported her throughout her undergraduate career. She did a second masters in public policy. She now works for FOX. Her TV show is about exploration of outer space. Space research and exploration is more active now than ever.

TV show is nationally syndicated on FOX and on Hulu. 500,000 viewers per week. Audience is 55% female. Age range 20-30 and they want to tap into teenagers next year. Several sponsors. They film at NASA and at industry. She wants to partner with universities in the second year of her program. One of her goals involves creating communities of scientifically literate people. She also wants to highlight younger people, students doing research; and, working with educators more closely.

11:30 (10) **Rachel Manzer**, Teacher Involvement SSEP (CT SGC) - A School's Journey; The Difference Space Grant Makes

Hisham Alnajjar introduced the speaker. She works at Annie Fisher STEM Magnet School, an urban school.

In elementary schools, science teaching is often neglected. Annie Fisher used to be a low performing school. It was converted to a STEM school five years ago. The school partnered with the SSEP program. Students developed their own questions and they prepared proposals. Elementary schools worked with high school students, as well as college students. Majority of students involved with the programs are pursuing STEM studies.

Teachers who said she did not have time to teach science now love teaching science. The school has now become an award winning school. Ms. Manzer got her start from Va. Space Grant. They sponsored a program for teachers. She has been working on teacher workshops. Tremendous opportunities are available to us.

11:40 (10) **Jeff Goldstein**, Center Director, National Center for Earth and Space Science Education - Collaborations between Space Grant Lead Institutions and NCCESSE / Clarke Institute: Successes and New Opportunities.

Steve Ruffin introduced the speaker.

Program of NCCESSE and Arthur C. Clarke Institute for Space Program Study.

8 SSEP flight opportunities. Space shuttle and also to the ISS. 110 communities have participated. Over 600 local partners, including 26 Space Grant Consortia. Participants from K-12 to college students. All missions have been very successful. Exhibit on National Mall. They are working on expanding the exhibits in other states. He showed a drawing of the exhibition pieces.

11:50 (10) **Chris Koehler**, Rock-On (CO SGC)

Steve Ruffin introduce the speaker. Record year, last year, with 65 participants. Chris gave awards to previous years participants. 180 institutions have been represented. 99 payloads with 97% success rate. Next meeting again at Wallops in June 2015. Flyer is in registration materials.

Noon (65) Lunch

Space Grant Student Presentations

1:05 (15) **Brian Stutzman**, Experiential Project Mgmt. for Student Research Teams (LA SGC)

Eric Day introduced the speaker, who is a student at LSU. Ionization Nexus for Discharge Research in the Atmosphere. Three subgroups. Electrical, software and mechanical. The speaker was the project manager. He talked about his duties. He talked about the difficulties associated with creating a project development plan.

A project development plan includes describing tasks, assigning tasks, team communication, team building (optional, helping each other, outside of lab activities), leading by example. Moral of story: a cohesive team stays together.

1:20 (15) **Benjamin Leon**, Georgia Institute of Technology (GA SGC) - Two Space Grant Supported Perspectives on Research: A Continuous Trailing Edge Flap Design and Automated Landing Systems for Unmanned Air Vehicles

Steve Ruffin introduced the speaker, who is a student at Georgia Tech. Graduating May 2015. He worked on continuous trailing edge flap design and an automated landing system.

First project was at the aeronautics academy at NASA in 2013. Continuous trailing edge design has been around 1980. Breaks in the edge create drag. With continuous flaps, camber can be varied along the span. They were asked to work on movable trailing edge designs, so different designs could be tested. Span of 6.5 ft. Mr. Leon worked on the wing design. 20 independently controlled servos. Strain gauge sensing use for data collection. They conducted two and a half days of successful wind tunnel testing.

Second experience was at NASA Langley. Developing an automated landing system for Edge 540 aircraft. Software in the loop approach, which is a standalone testing tool. They used laser range finders. Used software on a RC cars. Tests were successful.

1:35 (15) **Ian Dettwiller**, Mississippi State University (MS SGC)

Dr. Nathan Murray introduced the speaker. The speaker is a student at Mississippi State. All fellows in MS need to do outreach work. His research was on design optimization using Bayesian application. His outreach involved the Jackson MS Public Schools. Seven high schools, with the schools getting F F F D D C C. Predominantly minority schools. Three schools were 100% minority. Very low graduation rate.

The project involved a reading comprehension package and presenting what they read and understood. They also had a STEM day. They saw the rocket design team. They met spears and they had golf experience and saw a glimpse into sports research. Initial presentation attendance was 150. The speaker's students have a 99% graduation rate.

1:50 (15) **Alex Nikle**, University of North Dakota (ND SGC) - North Dakota UAS research: Putting The Power of Information Gathering in the Hands of the Farmer

Santhosh Seelan introduced the speaker, who has a B.S. in commercial aviation from University of North Dakota. Also received a M.S. in space studies and is now exploring doctoral opportunities.

Tales about basics of precision agriculture. Conventional management applies the same amount of seed to the entire field. Precision management applies different levels of seed depending on soil conditions. These conditions can be measured by UAS. Satellite data, manned aircraft, and UAS data pinpoint problem areas, such as soil PH, and pest infestation.

Remote sensing is very efficient tool for individual crop analysis and UAS is useful from cost and resolution perspectives. Cameras off the shelf, bought locally and connected to infrared filters. This became the UND CropCam.

First test flight in 2012. All equipment fit in the back of a pickup truck. On site assembly of the aircraft. Hand-launched. PTGui as the image stitching software. Software did not perform well. They then switched to Autopano and after that they also used GeoTagged Fields and Global Mapper for georeferencing software, which did very well.

Significant savings can be realized by improving crop yields. In recent years, FAA has been giving more permits for flying UAS.

Fellowships and Internships Opportunities and 2015 Selection Process

2:05 (25) **Carolyn Knowles**, NASA Internships, Fellowships and Scholarships (NIFS) Director and **Barrett Caldwell** (IN SGC)

Steve introduced the speakers.

NIFS leverage NASA resources. Internships are hands-on opportunities. Eligibility requirements (see presentation)

Concerns from SG. Quests from multiple centers. Some centers ask for special considerations while applications are open. Some requests early and outside OSSII.

Concerns addressed by working group. Process favors centers that make their requests first. SGs sometime bypass coordinators at NASA and contact mentors directly.

Application window closes March 1. Summer applications only.

Pilot process outlined in presentation.

Internship stipends as announced in the NASA base proposal solicitation.

Look at slides for fellowship definitions. ASTAR fellowship.

Scholarships. Both scholarship and internship components.

Current scholarships. Aeronauts graduate scholarship, aeronautics undergraduate, MUREP.

CubeSat and HEO Mission Directorate Programs

2:30 (20) Advanced Exploration Systems (AES) University Engagement

Jason Crusan, Director of NASA's Advanced Exploration Systems Division

Before the talk, Steve marked the passing of Leonard Nimoy by showing a collection of clips involving Mr. Spock from Star Trek. He then introduced the speaker.

Mr. Crusan began by talking about how space flight and operations have changed. He mentioned President Obama's talk in April 2010. He listed strategic principles for sustainable exploration. Please see the slides for a complete list.

Global exploration roadmap. See slides for list.

Strategic knowledge **map. unknown** and incomplete data set that contributes cost or risk to future human missions to the moon, ... (see slides)

Evolvable Mars campaign, advanced exploration systems, crew mobility systems, deep space habitation systems, vehicle systems, rapid prototype lander development, Lunar catalysts, involving industry cooperation, operations domain are all projects of interest.

University engagement strategy. Just about every program has university participation.

3 such projects. RASC-AL, aerospace concepts, robots,

Cube-SAT will fly as auxiliary payloads on previously planned missions of ISS deployment. 128 institutions, 30 states.

X-HAB (exploration Habitat) academic innovation challenge

White House Maker Initiative - Spacecraft Nation

New cube sat launch initiative August 7, 2015

2:50 (15) Space Grant Student Satellite Project
Luke Flynn (HI SGC), *Angela DesJardins* (MT SGC), and *Chris Koehler* (CO SGC)

Moved to after coffee break

3:05 (15) **Coffee Break and Group Picture**

Invited Talk

3:20 (30) *Mark Mitsui*, Deputy Assistant Secretary for Community Colleges,
U.S. Department of Education (ED)

This talk was replaced by Aprille Ericsson's talk

3:20 (30) *Aprille Ericsson*, Program manager, Innovative Technology and Partnership Office -
NASA HQ

Ms. Ericsson began by describing the four locations of NASA Goddard and went on to discuss

- Astrophysics, earth science, heliophysics, (Please look at slides for a complete list)
- Source to Output review.
- Several partnerships with universities and industry.
- Thermal materials in professional apparel.
- Telescope innovations improve speed and accuracy of eye surgery.
- Image segmentation analysis for mammograms.
- Optimus Prime spinoff challenge - for students help shape NASA innovations
- SBIR/STTR - 50-170 m budget. Next year at \$200m. Three phase program.
- STTR subtopics developments - Developed to support the needs of other NASA programs
- 2015 phase 1 3/19/2015

Space Grant Consortium

3:50 (20) Open Discussion

Not held due to time constraints. Some announcements were made instead.

Mary Sandy: Va. SGC will be managing graduate research awards for the National Academies. Email coming soon. Even social science, but primarily STEM topics.

Barrett Caldwell: VOSS (visiting our solar system program) Model, scaled model of solar system.

Status and Future of the Space Grant Foundation

4:10 (60) *Philippe Geubelle*, National Space Grant Foundation President (IL SGC)

- Non-profit 501c3
- Established by SG directors, run by a board. Goal is to support SG consortia any way possible.
- Administrative staff consists of 0.6 FTE. Account services, support services, external contracts
- Managed funds restricted for use by directors of SG consortia
- Receive and manage donations, process membership fees, manage investments, non- programmatic expenses, report on financials
- \$436,000 in deposits in 2014. \$1.4 MM in directed funds, \$448 M in quasi-endowment funds.
- Support services include meeting registrations, stipend processing, website development, subcontractor for SG program, fiscal agent on external contracts for SG program
- \$612 M in revenue in 2014.
- External contracts have no direct ties for SG program. These include Aerospace scholars, John Mather Nobel scholars, KSC Higher education, XHAB program are among the external contracts

- Financial overview. Running surplus except for last two years. But deficit for last two years. Board put a stop to new business, so income went down. Open to comments on how to run the Foundation. Executive director search underway. Addressing the shortfall is a priority.
- Q&A. A lively discussion ensued.

5:10 (5) Announcements and Recap of Day 2

5:15 **Adjourn**

National Space Grant Distinguished Service Award Reception and Banquet

Dr. Ellen Ochoa, Director, NASA Johnson Space Center, was the award recipient.

General Session: Day 3, Saturday, March 1, 2015

9:05 (5) Announcements.

Denise Thorsen from Alaska SG gave a short update about her involvement in CubeSat and showed a paper model of her mechanical design. She had 500 for an open house and the participants will design their own satellite.

9:10 (10) ***Kristen Erickson***, Director of science engagement at NASA HQ.

Ms. Erickson began her career in 1983 supporting the Space Shuttle in various capacities. Recently, the Science Mission Directorate restructured (after many meetings) and she is making this presentation to explain current opportunities. They are detailed in a CAN and they would like to have a more collaborative approach. The solicitation is NNH15ZDA004C, which went out 2/4/15. The Notice of Intent is due by 3/4/15, with proposals due by 5/4/2015. The Science Mission Directorate is trying to get Scientists and Engineers into their environment. They have 100 different missions to apply for.

Various questions were entertained about combining SG applications by region and mission applications. Both are permissible.

Mission Directorate Working Groups

- 9:20 (45) Mission Directorate Working Group breakouts
- **Aeronautics Research** (Crystal II)
 - **Human Exploration and Operations** (Crystal III)
 - **Science** (Crystal V)
 - **Space Technology** (Crystal VI)

10:05 (20) Mission Directorate Working Group Chair reports

Aeronautics Research: Michaela Lucas and Haim Baruh were reelected as co-chairs. The co-chairs will develop a survey among SG consortia to better highlight and publicize aeronautics activities.

Human Exploration and Operations: Barrett Caldwell was reelected as chair. The working group will work towards increasing awareness and student opportunities regarding spaceflight operations (mission control), both at NASA and at private industry. Barrett is following up on making contact with the HEO education office and others at the Centers to better tie Space Grant to the HEO Education initiatives.

Science: Cass Runyon and Terry Teays were reelected as chairs. The working group discussed SMD-SG internships. Currently, the only such available internship is with Chandra. A productive discussion with Ms. Kristen Erickson followed about restructuring SMD education and the current SMD CAN.

Space Technology: Darren Hitt was reelected as chair. Discussions followed on how the Space Grant community might better communicate and interact with STMD. The Group/Chair should reach out to the new administration in STMD and establish a dialogue. A goal would be to persuade the STMD to allocate funds to Space Grant; another goal is to increase the Space Technology Research Fellowships.

10:25 (20) Coffee Break and Networking

SG Regional Breakouts

- 10:45 (45) Space Grant Regional Breakout Sessions
- **Great Midwestern** (Jefferson I & II)
 - **Mid-Atlantic** (Crystal II)
 - **Northeast** (Crystal III)
 - **Southeastern** (Crystal V)
 - **Western** (Crystal VI)

11:30 (20) Regional Highlights

Main topic of discussion was the format and frequency of Space Grant meetings. Current format is yearly spring meeting in D.C., with fall meetings alternating between national and regional.

Great Midwestern Region - Decided to not take a vote but to encourage the Space Grant community to take another look at how we meet and when we meet.

Western Region - They are happy with the National meeting in the spring in DC and alternating national and regional meetings in the fall with national meetings occurring in odd years (2015, 2017, 2019).

Mid-Atlantic Region - They are happy with the current practice by a 4 to 2 margin.

Southeast Regional Region - Majority happy with the current practice. Two abstentions.

Northeast Regional Region - 6 voted for alternating National/Regional meetings, as is the current practice.

- 11:50 (10) Meeting conclusion with recap of key discussions, key decisions, upcoming events, and outstanding actions.

All participants enthusiastically thanked the DC SGC for all their hard work in preparing the meeting and also thanked Steve Ruffin and all volunteers who helped organize the meeting. See you in Arizona.

12:00 Adjourn

Treasurer's Report
August 2015

ON DEPOSIT WITH NSGF
(As of 30 Jun 2015)

(As of 31 Mar 2014)

	ACTIVITY	PREVIOUS BALANCE	CURRENT AMOUNT
Quasi- Endowment Fund¹		\$10,598.70	
Income	Net Interest/Earnings/Distributions		\$1,785.97
	Change in Market Value		(\$437.51)
Total			\$11,947.16
Participant Directed Fund²		\$27,084.27	
Income	Net Interest/Earnings/Distributions		\$1,030.26
	Proceeds from S14 Meeting		\$3,379.46
	Proceeds from S15 Meeting		\$3,570.48
	Dinner Reimbursement		\$37.00
Expenses	Transition Dinner (2014)		(\$824.93)
	Travel (M. Jaridi, S. Ruffin, M. Sandy)		(\$2,014.95)
	Change in Market Value		(\$1,399.09)
Total			\$30,862.050

Respectfully Submitted,

Peter C. Sukanek
Treasurer

¹ Formerly "Endowment"

² Formerly "Expendable"