

Minutes of National Council of Space Grant Directors Spring Meeting Arlington, Va., February 26-28, 2020

WEDNESDAY, FEBRUARY 26

Executive Committee Board Meeting
6:00 p.m. Executive Committee Board Meeting
9:00 Adjourn

National Space Grant Foundation Board Meeting
6:00 p.m. NSGF Board Meeting
9:00 Adjourn

THURSDAY, FEBRUARY 27

8:30 a.m. Welcome - *Eric Day*, Meeting Host
Eric welcomed us. He gave a summary of logistics and turned over the meeting to Angela.

Council Business

8:40 Intro and Executive Committee Update - *Angela Des Jardins* (MT), Council Chair
Angela welcomed us. She asked for feedback on the new format of two-day (Thursday and Friday) as opposed to Thu-Fri-Sat. She showed family pictures as well as pictures from her Space Grant family. She then described changes to Space Grant in the past year. \$4 million additional funding, equal funding for states, Mission Directorate alignment, and new meeting times.
Angela continued with thanks. First to Andy Arena, for the superb video he produced for the 30th Anniversary of Space Grant and at very little cost. She gave Andy a gift. Then to Lynn Fenstermaker and Marissa Saad for their excellent work on the 30th Anniversary of Space Grant.

Congratulations to the following Space Grant colleagues on their national awards:
Suzanne Smith, who became a fellow of AIAA.
Bill Matthaeus, for receiving APS James Maxwell praise for Plasma Physics.
Antoinette (Toni) Galvin, who became a fellow of American Geophysical Union.

Please inform Angela of new honors so we can acknowledge them and celebrate our colleagues' successes. There were several new people introduced; for brevity we are only listing the new directors: ND (Caitlin Nolby), KY (Alexandre Martin), VT (Bernard "Chip" Cole), ID (interim director is Matthew Bernards), IL (Joshua Rovey), CT (Mary "Cater" Arico).

Angela then gave a summary of the Executive Committee activities, to include 30th anniversary, Space Grant video, discussions with our NASA leadership, planning of meetings, distinguished service awards, donated funds in memory of three Space Grant directors who passed away; Yervant Terzian (NY), Darren Hitt (VT), and Michael Wiskerchen (CA). Angela then provide an overview of the meeting.

9:00 Secretary and Treasurer's Reports - *Haim Baruh* (NJ), Council Secretary and *Majid Jaridi* (WV), Council Treasurer

Haim and Majid gave reports. Both approved. ExComm account has two parts; participant quasi-endowment fund and participant directed funds. The stock market did well and there is a total of \$93,000 in the ExComm account.

9:10 Nominating Committee Update - **Chris Koehler** (CO), Nominating Committee Chair

Chris gave his report. Seeking nominations for chair and three ExComm members and three Nominating Committee members. Working groups select their own chairs tomorrow. He then gave the list of nominees. Nominated for Chair is Luke Flynn. Nominees for ExComm are Lynn Fenstermaker, Tomas Gonzales-Torres, Chris House, and Denise Thorsen. Nominees for Nominating Committee are Angela Des Jardins, Joshua Rovey, and Caitlin Nolby.

9:20 MEMORY - **Angela Des Jardins** (MT), Council Chair

Most exciting moment of the recent year (MEMORY). Split into groups, share, share with whole room, build a digital yearbook. They all got up, took our badges off and formed groups. After memories were exchanged, colleagues got up and described them.

10:00 **Student Poster Session and Refreshment Break**

NASA Leadership

10:50 NASA Leadership, Part I: High Level Topics - **Mike Kincaid**, NASA Associate Administrator for STEM Engagement

Angela introduced Mr. Kincaid. Mr. Kincaid began with describing the Q&A process for the meeting. He then discussed a favorite passion of his family: stuffed animals. He showed pictures of Nutmeg during the HASP launch. Mr. Kincaid proceeded to discuss the STEM Engagement Enterprise of NASA.

Vision: engage students in NASA's work, enhance STEM literacy. Please see slides on focus areas. Left side: mission directorates, right side: beneficiaries.

He said the most important Space Grant meeting he attended was his first. He wanted to learn from Space Grant. Please see slides for the feedback Mr. Kincaid received from that meeting.

Mr. Kincaid's goals: improve communication, enhance efficiency, advocacy, uniqueness, relations with NASA and Mission Directorates, resources to communicate, improve national workforce, sustainability and multi-year funding.

Please see slide for the FY18 performance assessment. Please visit the site stem.nasa.gov, which describes NASA STEM engagement highlights. He showed pictures from the 30th anniversary of Space Grant event at Capitol Hill with NASA Administrator Jim Bridenstine.

\$50 million has been allocated for the student projects Space Grant consortia have proposed. Big Ideas challenge will continue next year.

Mr. Kincaid showed the new organizational chart of OSTEM. Mike Kincaid, Kris Brown for strategy and innovation, Elaine Ho for STEM Engagement (Space Grant, MUREP, EPSCOR, NextGen).

Mike Kincaid introduced Elaine Ho, who then spoke. She has been around for 15 months. Lawyer by training, Ms. Ho worked in Michelle Obama's office. True commitment to diversity and inclusion and collaboration. She discussed the MEGA PI meeting in 2019. She looked at feedback for that event to improve the 2020 meetings.

OSTEM summit goals: sharing best practices on increasing diversity, forming effective partnerships, teaming, and opportunities for individual projects. The dates of the proposed summit will be August 10-13, 2020, at Langley. Please see slides for schedule and the planning process. Space Grant consortia will be sent surveys.

Mr. Kincaid then asked the NASA personnel at the meeting to stand and be recognized. Applause followed. He described there were all kinds of NASA leadership present and personnel from across the country were represented at the meeting.

Mike Kincaid then described Mission Directorate successes of the past year; Big Idea Challenge, Artemis Student challenge, webinars by VA SGC, and law interns. All these successes are connected to collaborative efforts. He then showed a slide of FY20 STEM Priorities. Engage students in Artemis, Commercial Crew, ISS, immersive virtual experiences, understand and explore our planet on 50th anniversary of Earth Day. Please see slides for more details of each challenge. Human explorations Rover, Micro G, spacesuits, First Nations launch, Big Idea Challenge, student launch, and Lunabotics.

Mike Kincaid then showed a web site listing notable milestones on NASA STEM engagement. New search engine, as well as improved look, organization, and navigation. Please help us publicize the site.

NASA Express: Make sure you get the weekly newsletter NASA.gov/stem/express.

NASA Museum Alliance. Please see slide for more details of this program connecting informal educators with NASA. informal.jpl.nasa.gov

#beanastronaut. Astronaut applications are due March 1. Please see slides for requirements. US citizen, MS Degree in a STEM field, two years professional experience, pass NASA astronaut physical. NASA.gov/astronauts, intern.nasa.gov, stem.nasa.gov/explore_stem_careers, NASA.gov/stem/express are sites we need to explore. Several ways to follow NASA on social media.

Mr. Kincaid then discussed topics that will be covered in Friday's session.

Q&A session. Certain questions will be deferred to Friday.

Budgeting. Even though the Space Grant budget has increased, the amount maintained by Space Grant office has remained the same. All that money goes back to Space Grant consortia in some way or other, such as internships and student challenges. Mr. Kincaid expressed hope that Mission Directorates will bring their own funding to the table. The first members of Commercial Crew have not been announced yet.

Mike Kincaid then asked all NASA personnel to state their names and affiliations. He then showed a promotional video on Artemis.

Council Business

12:00 p.m. Council elections - **Chris Koehler** (CO), Nominating Committee Chair

Angela stepped down from being a nominee to the Nominating Committee and Steve Ruffin accepted a nomination.

12:05 **Lunch**

1:45 Texas Space Grant LiftOff Program - **Margaret Baguio** (TXSGC)

Angela introduced the speaker, who began by giving an overview of this program for teacher professional development. Please see slides for LiftOff Institute. The program also includes week-long student development. Resources and Impact: speakers, curriculum, online resources, projects and activities, handouts, 7,000 students, 1,000 fellow teachers, numerous indirect contacts. For details, please see slides for program content. General goal is to assist K-12 students.

Debbie Reynolds, an alumni of the program, spoke next. She met Margaret in 2017 and was invited to LiftOff. The experience changed her forever. She will never forget the tremendous experience she had. She is now an Einstein Fellow as a result of her experience with the LiftOff program.

Please see slides for status of other alumni of the program. Colleen Fava, also an alumni, stood up and stated very complimentary views about the program. Announcement for the next round are coming shortly.

2:00 Rhode Island Apollo 50th Celebration: Lessons Learned - **Peter A Schultz** (RISGC)

Angela introduced the speaker by praising the Rhode Island for its 50th anniversary activities. Peter said he spoke to astronauts and listened to what they said. The goals were to identify focus, establish partners, and develop exhibits.

Themes included legacy of Apollo, Rhode Island's role, lunar and planetary exploration, human exploration, NASA is RI, and Apollo and the arts.

The Museum of the Moon conducted month-long activities until July 20. Opening night of festivities was July 8. Please see slides for pictures of opening night. Over 900 visitors. They did space chats from July 8 to 22 with an expert speaker every night. Please see slides for complete list of events. 5,000 attendees at Museum of the Moon, and over 100,000 people attended festivities.

NASA Education Community

2:20 NASA Community College Aerospace Scholars Panel - **Haim Baruh** (NJS GC), **Andy Arena** (OKSGC), **Alicia Baturoni Cortez** (NASA Johnson), **Kathleen Coughlan** (OKSGC), **Nidhal Marashi** (NJS GC)

Andy moderated the panel discussion. Haim gave a background on how he got involved with NCAS and how he was blown away when he went for a site visit at Essex County College. He was very impressed by the enthusiasm of the students and their creativity. After the visit, Alicia, Haim and Andy spoke and thought it would be a good idea to showcase the NCAS program in more detail.

Alicia Baturoni Cortez gave a history of the program, which is for community colleges that are MSIs and described the activities and final competition. She encouraged Space Grant consorts to contact her if they decide to run the NCAS program in their states. Please see slides for more details.

Kathleen Coughlan and Nidhal Marashi then gave details of the NCAS program at their institutions. They showed pictures and videos of the students in action.

National Space Grant Foundation

2:30 **Shawna McBride** (WY), Chair, National Space Grant Foundation Board, and **Kevin Freese**, Chief Executive Officer, National Space Grant Foundation

Angela introduced the speakers. Shawna began by giving a history of the Foundation, which was started in 2001 by Bill Byrd (IA) Bill Hiscock (MT), and John Wefel (LA). Foundation's mission is to promote STEM education and raise funds toward that goal. Please look at slides for long-term vision.

Collaborative projects, source of funds independent of universities. Each state has an account with the Foundation. Endowment created from donations by states and directors.

Primary goal is to provide long term funding, support services, national conferences. Please see slides for Foundation Board members. Current activities include support services for meetings and events, facilitate award funding (fellowships), help with purchases and payments, affiliate dues, invoice vendors, assist with purchasing difficult items, help with problem solving, and management of Space Grant and NASA related activities. See slides for details.

The NASA internship programs are doing very well, 40-50 interns in Fall 2020 semester.

Foundation is rebranding with updated web site and logo, as well as donation links. Foundation can create state pages and social media presence. Foundation also offers an online STEM store. New focus for the future: growing our ability to provide opportunities for students.

Kevin Freese introduced the Foundation staff and thanked Space Grant directors, especially Caitlin Nolby, for helping the Foundation. He also thanked Eric Day for help with the web site. He asked the Foundation Board members to stand and he asked the attendees to applaud them. Vigorous applause followed.

Please see slides for Foundation services overview. Kevin showed a nationwide map of Spring 2020 placements. He discussed changes coming to the NSGF web site.

Kevin wants all SG consortia to provide a link to the NSGF and associated STEM store on their web sites. Foundation will have more emphasis on donations, compilation of a donor base, and on donor management. He wants our help in raising donations. He discussed fundraising partnerships with money managers. The total return on investment was close to 18%. Please see slides for activities planned for immediate future.

Best Practice Discussions

2:50 Overview and charge
3:10 Two half-hour sessions in these topics:

- Scaling up new programs, FIRST HALF led by *Luke Flynn* (HISGC), *Cass Runyon* (SCSGC), and *Denise Thorsen* (AKSGC); SECOND HALF led by *Chris Koehler* (COSGC), *Robert Winglee* (WASGC), and *Suzanne Smith* (KYSGC)
- Improvements for OEP/Tracking Tables/Expenditure Summaries and FY2019 Lessons Learned led by *Michael Cherry* (HQ), *Debora Nielson* (ALSGC), and *Laura Stacko* (OHSGC)
- Creating engaging websites, social media, and print materials, led by *Caitlin Nolby* (NDSGC), *Chris Harmon* (MTSGC), *Lee Cannon* (NCSGC)
- MUREP collaborations and involving Minority Serving Institutions, led by *Christine Bolz* (WISGC), *Colleen Fava* (LASGC), *Alicia Baturoni Cortez*, NASA MUREP, and *Misti Moore*, NASA MUREP

3:35 **Refreshment Break and Networking**

Space Grant Regional Breakouts

3:55 Regional Breakout Sessions

Charge: what collaborations are happening, what collaborations are possible, possible locations for 2021 meetings. What are the valuable outcomes of your meetings?

Great Midwestern (GMR)

Demoz Gebre reported. Four topics were discussed.

1. David Kankam gave an update on opportunities at Glenn including faculty summer fellowships, internships and fellowships for students.

2. Regional meetings were discussed. GMR has switched over to virtual meetings. The virtual meetings are held twice a year and last 2 hours. In our virtual meetings, we discuss administrative issues (with an invitation to NASA to join and provide updates) followed by presentations from three states (20 minutes long). The presentations are cycled around the region with the goal of getting each state to present at least once within a 1.5-year long cycle.

The presentations are one of three types; research, scalable projects, and “other” for talks that don’t fall into either category. The Midwest has had two such meetings to date and the third is scheduled for March, 2020.

They had a discussion about whether the meetings to date are achieving their goals. Various members of the region indicated they believe the meetings are achieving their objectives of providing a forum to share ideas and keeping us informed of what is going on in the region. Therefore, the plan is to continue with bi-annual regional Videocon.

This led to the discussion about whether three national meetings per year was desirable.

There wasn't a consensus on whether 3 national meetings a year (i.e., a fall national meeting+ the mega PI meeting and a spring meeting) were worthwhile. Some indicated it was, at a minimum, a strain on the budgets; that is, it was not clear if the added benefit that comes from a third face to face meeting outweighed the cost of attending such a meeting.

3. GMR discussed planned collaborations centered around the Artemis student challenge. Illinois and Minnesota made proposals. Both Minnesota and Illinois described their proposals. The states of GMR agreed (in principle) to collaborate if either one of those proposals were selected for funding. Most time was spent on agenda items 1 & 2 and, as such, a detailed discussion on assessing current (ongoing) collaboration ensued.

4. Washington State gave recruitment pitch for their "Roads to Mars" competition.

Mid-Atlantic

Melanie Page (WV) reported. Representatives from all seven states of the Mid-Atlantic Region were in attendance. Three main topics were discussed.

1. What collaborations are happening in your region?

As a spinoff from the Regional meeting held in WV in Sept 2019, James Harrington of GFSC, agreed to lead a workshop on NASA's big data problem using machine learning and AI. West Virginia will host a symposium in May, 2020 targeting researchers and faculty to enhance their understanding of the problems NASA is facing regarding the analysis of large amounts of data they are receiving every day. This symposium will also address how to collaborate on writing a proposal to address this problem to be used as a vehicle for a common regional project. The Mid-Atlantic Regional Consortia will collaborate to bring in NASA scientists and involve researchers and faculty from various universities in this region.

What collaborations are currently going on?

Virginia Space Grant, Mary Sandy, has submitted a multi-state proposal to the Artemis challenge.

2. Location for Fall 2021 meeting is Newark, Delaware.

3. Valuable outcomes of our Fall regional and National meetings:

a) One benefit of regional vs national is that more affiliates can join and become engaged. Also, students are able to attend providing a valuable experience for them;

b) Regional meetings encourage ability to start smaller collaborations that are authentic and organic;

c) There is also value in visiting the different space grant consortia and seeing "on the ground" operations of different space grants,

d) Fall national meetings are crucial for directors to be more effective in their roles as they set the agenda and have time to focus and work together as a community.

Northeast

Jeff Hoffman (MA) reported.

Agenda items were collaborations, future meeting venues, and evaluation of meetings

1. Collaborations. Other than a regional teacher workshop a few years ago, there have been no formal collaborations within the region, although there have been some outside of the region.

2. Meeting Venues. The next Northeast regional meeting will be in Maine. The one after that will be in Connecticut.

3. Evaluation of Meetings. Space Grant worked hard to reduce the number of annual meetings from three (two national plus a regional) to two (one in DC and alternate between national and regional). With the addition of the summer large OSTEM meeting, we are now back to three meetings a year. The consensus of the group was that this is too much, both in terms of time and money and recognizing that there is just not enough new material to justify three annual meetings. The group did not recommend a solution, but this is something for the ExComm to work on with NASA management.

Southeastern

Nathan Murray (MS) reported. Four main topics were discussed.

1. Planning is underway for the 2024 Eclipse, which will pass directly over Arkansas on April 8th. Arkansas SGC is working on collaborative opportunities for the region. ASGC is also working with their home institution to reserve space at the university's 40-acre Winthrop Rockefeller Institute on Petit Jean Mountain.

2. The region has 3 NCAS sites: 2 in Mississippi and 1 in Georgia.

3. Informal collaboration: Sites draw students from outside the home jurisdiction of the NCAS site; encouraged Space Grants to help with travel funds.

4. They noticed there were no awards in the Region from the Big Idea Challenge and no limited proposals to the Artemis Student Challenges. Certainly, there wasn't a dedicated collaborative effort regionally to pursue these funding opportunities. This is something the region would like to work on, and this would be the perfect focus for regional meetings.

5. Regional meetings. Three national meetings are too many, particularly when several in the region are also involved in the EPSCoR meetings.

The Spring/Fall meeting cycle is valuable in general due to the annual funding cycle, the content/focus differences between the two, and the need to develop authentic connections between consortia.

Regional meetings, in general, offer DEPTH for MENTORING new program staff, gaining EXPOSURE to collaborative opportunities, on-the-ground knowledge of jurisdictional EXPERTISE, and development of RELATIONSHIPS with affiliates/students for networking.

Key Point: DEPTH in RELATIONSHIPS is necessary to develop COLLABORATION.

6. Thinking forward. NASA is bringing Mission Directorate \$\$ and new opportunities to the space grants. But, to compete, collaboration is key and not every jurisdiction gets \$\$.

The SE Region plans to use its next regional meeting; Fall 2021 in Puerto Rico, to (a) plan the 2024 Eclipse Collaboration, (b) develop ways to tie Space Grant together with EPSCoR and

MUREP in the region, and (c) generate at least 1 collaborative proposal for one of NASA's special opportunities. They need a timeline from NASA for these new special opportunities to allow for collaborative efforts to develop.

Western

Tim Urban (TX) reported. Texas volunteered to host the 2020 regional meeting in Houston. It will take place later in the Fall to avoid heat, humidity, and hurricane season.

Many collaborations were noted between states in and out-of-region, as well as nation-wide events, including:

ND, NC, SC: teacher workshops and hands-on lessons with Langley

NV - VR: commercial crew workshop in summer

TX: Liftoff, SEES programs

MT, SD, WY: July ballooning workshop

WA: ROADS student challenge which includes 600 educators

CO: RockOn, RockSat 2020 includes teams from 20 different programs

WA, WY: regional AI hack week

Future collaborations and ideas include

CO: wearables and materials workshop

HI: low cost CubeSat kit for undergrads, with an online course

MT, SD, WY: student ballooning summer intern program Eclipse - annular eclipse 2023, total eclipse 2024, planning needs 2-3 years lead time

What are valuable outcomes of Fall regional and national meetings? Regional and national meetings serve different purposes. The OSTEM meeting may be redundant. More affiliates and students attend regional meetings. How we approach the NASA way is unique in every jurisdiction, and regional meetings provide for more collaboration, discussion, and getting a tour of that state and a feel for the diversity of programs. The quality of networking is very high at regional meetings.

Mike Kincaid came to the podium and stated he would like to clear misconceptions about meetings. He said his concern is about the Fall national meetings; not the regional meetings. OSTEM will not send NASA personnel to the next Fall national meeting. He appreciates that we want to form relationships and using regional meetings is fine. He has no objection to that.

Q. Is Mega PI going to be an annual event? Probably.

Space Grant will do better if it is connected to NASA Centers.

5:00

Adjourn

National Space Grant 30th Anniversary Celebration and Award Banquet

6:30 Opening Reception
7:30 Dinner, Presentations, and Q&A
National Space Grant 30th anniversary celebration - Lynn Fenstermaker, 30th anniversary committee chair
Tribute in Honor of Yervant Terzian - *Haim Baruh, Mary Sandy, Majid Jaridi*
Award presentations - *Angela Des Jardins*, Council Chair
Presentation - *Chad Rowe*, NASA Space Grant Program Manager
Guest of Honor Introduction - *Jobi Cook*, NCSGC
Presentation: *Zena Cardman*, Astronaut and Space Grant Alumna
Q&A with Zena Cardman

Because of time constraints, the tribute to Yervant Terzian, longtime director of New York Space Grant and Chair of Alliance and ExComm, was shortened. One of the people who could not speak was Joe Danek of TIG. Below is the speech he would have given, if more time were available:

I first met Yervant 20 years ago when TIG and VSA became engaged with NASA's National Space Grant and Fellowship Program. I marveled and was awed by his productivity, creativity, energy, and enthusiasm. Imagine, 225 publications, 7 books and all his other accomplishments highlighted by Haim, Mary and Majid. Yervant had an impact on our understanding of the world and on international communities and societies. He was an internationally renowned radio astronomer.

Yervant's most compelling characteristic for me was his humility and his unwavering commitment to sharing his knowledge and inspiring students, early career faculty, and the public about the wonders of our universe and our planet Earth. Yervant was a passionate scientist/educator, before it was fashionable to be so. His work on local and national advisory committees, his Chairmanship of the U.S. Square Kilometer Array (SKA) Telescope Consortium, and founding of the Armenian National Science and Education Fund to support Armenian researchers imposed considerable travel obligations. Yet, Yervant never missed "grabbing a front row seat" at a National Space Grant meeting, which he also never missed.

Yervant loved life.

He loved his wife, Patricia.

He loved his native heritage, Armenia.

He loved science.

He loved being an educator.

He loved NASA and its mission.

He loved Space Grant and the students we serve.

This humble talented man — Yervant Terzian — touched us all. They are grateful for having known him and for having shared a part of his life. Thank You, Yervant.

FRIDAY, FEBRUARY 28

8:15 a.m. Announcements and Updates

* Fall National Meeting in Wyoming - *Shawna McBride* (WYSGC)

Shawna gave details about the upcoming Fall 2020 meeting.

* Mitch Krell gave details about the ASTRO Camp Community Partners. It does not cost anything. For details, please contact Mr. Krell.

* Matthew Nelson described the upcoming academic high-altitude ballooning conference; June? 22-26. Please visit astartoballoonong.org/ahac for further details.

* Maryland provided information about the first African-American aviators and the upcoming movie about them. They also distributed a flyer.

Space Grant Highlights

8:50 NASA Aeronautics: Aviation at the Leading Edge - **Mary Sandy** (VASGC) and **Karen Rugg** - NASA STEM Engagement Aeronautics Mission Directorate Lead

Angela introduced Mary and Karen. Karen began by stating NASA was always first in doing things and the Aeronautics Working Group hosted three webinars in Fall 2019 in collaboration with Virginia SGC.

Mary stated the goal is to reach college and K-12 students. Please see slides for objectives, planning committee, and website.

Karen Rugg described the funding structure. Please see slides for details. Karen discussed the national reach and approach in developing the webinars. A SG director for webinars, live closed captioning, and also discussion of Space Grant opportunities. Post registration surveys. Scott Tarry, Steve Ruffin, and Susanne Smith were the moderators.

Mary estimated there were over 2,000 students and faculty from 44 states and international listeners as well. The largest international participation came from India and Mexico. Survey results show the audience found the webinars interesting and understandable. They wanted to see more webinars. Very positive feedback overall. More in-depth technical content and more Q&A was requested for future webinars. Scott Tarry said he had a wonderful experience working with ARMD and with Old Dominion University. Susanne Smith expressed the same thoughts. Steve Ruffin made similar remarks at the Aeronautics MD breakout session.

9:05 RockOn, RockSat, and GLEE - **Chris Koehler** (COSGC)

Chris announced the election results. For Excomm Lynn, Denise, and Tomas were elected. The entire proposed slate was elected for the Nominating Committee.

Chris then gave a summary of RockOn, which is in its 12th year. Over 700 participants, 226 decks, 45 jurisdictions. NASA did a documentary of the program. RockOn is followed by RockSat C and X. They have had over 180 payloads, and 15,200 students have participated.

Great Lunar Expedition for Everyone (GLEE) was initiated in 2018 by Colorado and New York. 500 five-gram LunaSats will land on the Moon to conduct multiple experiments. Intended to be developed worldwide. glee2023.org

Please see slides for history of event. Currently, trying to decide which way to go. Arduino board is ready. Chris showed a video of a student group in Colorado. Spacecraft design should be complete by end of 2020. National workshop slated for July, 2021.

Collaborations and Partnerships Breakout Sessions

9:20 Three-minute “speed talks” in Jefferson I&II then move to breakout rooms

9:55 Breakouts

- NASA’s Artemis Student Challenge - NASA SUITS – **Brandon Hargis**, NASA SUITS Activity Manager
- Exploring and Deploying NASA Commercial Crew VR Experience – **Craig Rosen**, Community Engagement and Professional Development Administrator, Desert Research Institute, and **Jennifer Hudgins**, NASA Education Specialist, and **Lynn Fenstermaker** (NVSGC)
- DreamUp: Bringing Space to Classrooms, and Classrooms to Space – **Lauren Milord**, DreamUp Partnerships and Outreach Manager
- National Space Grant Foundation – **Shawna McBride** (WYSGC) and **Kevin Freese**, NSGF CEO
- Complementing Your Activities With NASA's Universe of Learning – **Emma Marcucci**, **Timothy Rhue**, and **Quyen Hart**, Space Telescope Science Institute

10:45 **Refreshment Break and Networking**

NASA Education Community

11:00 NASA Science Opportunities and Connections - **Kristen Erickson**, Science Mission Directorate Science Activation

Angela introduced the speaker. Ms. Erickson began with thanking Angela for all her efforts and presented her with a gift of a NASA-produced book. She then showed a fleet chart. Please look at the slide for more information. Science activation across the nation involves 54 exhibits, 4,600 libraries, 350 hands-on toolkits, 423 subject matter experts, 1.9 million educators, as well as 200 leveraged partnerships.

Please look at the National Academies Science Activation Assessment and the associated ROSES solicitation on NSPIRES.

Digital transformation initiative. Applied to Regional Space Grant/EPSCOR model. James Harrington is working on this initiative for the Mid-Atlantic region. First meeting is on May 20, 2020.

Q&A. Very critical to have breadth, depth and accuracy in subject matter experts. They are also working hard on broadening participation.

11:15 ROADS - **Robert Winglee** (WASGC)

Angela introduced the speaker. ROADS stands for Rover Observation and Drone Survey. This is a program for middle and high school students and educators. Aim is to increase aspirations of underrepresented and underserved communities. The students look at the Mars surface and investigate how rivers and craters form. They look at methane detectors and digital microscopes. They learn about mission design and how to break up a large problem into smaller doable chunks. They work with drones and concentrate on sensing design and decision logic partly to remove fears about programming.

5,000 participants, 600 teams, 95 teams with American Indians or Alaskan natives, and three visually impaired groups. WASGC is submitting a five-year renewal to SMD. Please see slide for division of labor for partnerships between SMD, state consortia, and institutions. See slides for schedule also.

11:15 International Observe the Moon Night - **Molly Wasserman**, NASA Goddard Space Flight Center

Angela introduced the speaker, who described this public outreach program. First, she asked how many people have participated in the program before. She discussed NASA's Moon exploration activities, such as Apollo, LRO, and Artemis.

Worldwide activity to observe the Moon and to observe the Moon in a meaningful way. Wide use of telescopes. She showed a video of the worldwide event. Video also featured Charlie Bolden; the previous NASA Administrator. moon.nasa.gov/observe

NASA provides literature and support. About 2,000 events worldwide last year. Every state participated. The next event is scheduled for September 26, 2020. Collaborate with NASA or just spread the word. They have a partner in Italy that does livestreams.

11:25 USIP Panel - moderated by **Joyce Winterton**, Senior Advisor for Education and Leadership Development at NASA Wallops Flight Facility, **David Pierce**, Director of NASA Wallops Flight Facility, **Staten Longo**, Systems Engineer at Northrup Grumman, and Susanne Smith (KYSGC).

Joyce Winterton opened the panel discussions and discussed the memories of the last 30 years and how impressed she has been with all that has happened. She introduced the panelists.

She continued to talk about the Wallops flight facility. Shared use by NASA and the military.

Goals of USIP were hands-flight project and to fly technology.

Funding provided by SMD and OSTEM. 33 states participated. Over 300 students involved in the first year. Please see slides for project management. Of the 47 awarded projects, 66% have launched. Eleven flights will be launching soon.

Feedback from faculty included real world problem resolution, teamwork skills, authentic NASA experience, and lessons learned from adversity. Feedback also mentioned life-changing experiences. Improved technical skills and continuing onto graduate study. Also, program provided employment assistance. Challenges included students wanting academic credit. Please see slides for other challenges and quotes from students.

Staten Longo spoke next. She was supported by Virginia SGC and worked on the Virginia CubeSat constellation. She is now employed by Northrop Grumman. Please see slides for her personal background. Please also see slides for a description of the Virginia CubeSat Constellation. Ms. Longo thanked Mary Sandy for all her efforts. She discussed all that Mary did for this activity. Close to 200 undergraduate and graduate students were involved. Please see slides for the Lift-off and deployment.

She then discussed a summary of what participants learned. Project planning, management, design cycle, view, customer needs, design validation, cross-discipline communication skills, politics, and becoming one cross-institutional team. She presented a current status listing of program alumni.

Suzanne Smith talked about experiences that Kentucky Space Grant had with the program. They had two teams from two Kentucky universities working on completely different projects. She then discussed student experiences. She stated both NASA and Space Grant consortium collaboration was key to success.

Q&A. Will project continue? Depends on OSTEM and SMD. Please talk to Mary Sandy for current state of Virginia's project.

12:10 p.m. **Lunch**

12:40 Talk: Understanding the Effects of Space flight on Astronaut Brains - **Dr. Donna Roberts**, sponsored by SCSGC

NASA Office of STEM Engagement Leadership, continued

1:10 Part II - Program Details

- **Chad Rowe**, Acting Space Grant Program Manager
- **Erica Alston**, Deputy Space Grant Program Manager
- Chad Rowe opened by saying he now knows 80% of the Space Grant community. He said the Space Grant office at NASA is fully staffed. Chad then gave a list of departing and arriving personnel. He then gave some information on his background. From Minnesota, BS in aerospace engineering at University of Minnesota. He liked aeronautics but moved to space activities. He is currently on loan from JSC. His previous assignment was in Russia.
- Chad gave an overview of the status of activities in the Space Grant office. Please see slides for details and for near term focus areas. Also, may qualify as a Big Idea program. They are working on the 2024 eclipse. More collaboration with ISS is needed to identify higher education student projects. Stem.artemis.nasa.gov
- Erica began her talk about base and augmentation awards. She indicated budgets are the largest source of problems. As of February, 51 proposals have been funded. Augmentation is in review phase. FY2020 funding will be partially awarded. They are trying to streamline things for year 2-4 augmentation. Erica then discussed the evaluation opportunity. Please see slides for details. Solicitation is coming soon. Also, look at the draft solicitation summary of \$500,000 for two awards. Start date is 9/1/2020. tinyurl.com/Sg-solicitation-feedback
- Mike Cherry discussed OEPM issues. Please see slides on APD and NCE requests as well as closeout reporting. OEPM for FY2019 closed February 3. As of now, plan on reporting for next year using the current system. A team working on OEPM will do the migration. Data call for 2019 White House

report will be sent to communities with qualifying MSI by Mike Cherry in a few weeks. Hard deadline of March 27, 2020.

- Frank McDonald talked about USIP. 39 USIP projects at OSTEM. Total 47 projects. Please see slides for summary.
- Raquel Marshall discussed the status of NIF. Internship program team consisted of Lynette Madison, Verica Clauson, and Raquel Marshall. Personnel duties are organized by region. See slide for individual centers. Also, see slides for statistics. Big increase from 2019 to FY 2020.
- Space Grant does not pay an overhead fee. Look at the slide for how NASA can help facilitate Space Grant Sponsorships.
- Valerie Ellis showed a slide with the access screen. Sponsorship can be done in three different ways. One way is a web-based form that is accessed by the coordinators which leads to the sponsorship form. Click yes to display the form. Space Grant can sponsor in three ways, as shown on the relevant page. You can then get to the report data screen for options 1, 2 or 3.

2:10 Q&A

Data collection for non-binary recording. Continue with current guidance. Policy for affiliates. Stay tuned.

Artemis proposers will be notified in March.

How many people can we bring to Mega PI? They are working on the issue.

NSSC and additional questions they ask about budgets. They have been working with NSSC on this. Bear with them. If there is a systematic issue, Space Grant office will get more involved.

No maximum number of OEPM users in a state. However, having too many becomes burdensome.

Flexibility exists for placing interns in different time frames and duration.

Site visits. There will be site visits and they have been discussing with Space Grant directors. Virtual site visits are also being considered.

Inside Space Grant page gives information on selecting a new director.

Tighter integration between Space Grant and EPSCOR. Continually being considered. New person in OSTEM; Elaine Ho, is the lead on this topic.

Working Groups

2:30 Working Group overview and charge: Address how our processes should change now that we are aligned with Mission Directorates. How should working groups be involved? How involved should NASA be in participation with our working groups?

2:35 Refreshment Break and Networking

2:50 Working Group Breakouts and Reports

Aeronautics Research Mission Directorate

Michaela Lucas reported. First a recap of last year's minutes was given by Michaela Lucas. A short discussion of the Aeronautics Webinars given in Fall 2019 followed. Aeronautics Webinars are a model for how this can work for other group activities. Great model to answer Angela's charge on how we can better collaborate.

Karen Rugg, NASA ARMD reviewed the thrust areas of ARMD.

Dave Berger, NASA ARMD is now on detail at NASA HQ as an OSTEM Embed to ARMD. He is the first in this type of position and HEO will be next. He will continue to support the group and look for new ways to connect in this position.

Richard Barhydt, NASA ARMD, graciously came to the meeting. He is ARMD Transformative Concepts Deputy Director and he discussed the University Leadership Initiative (ULI)

- Three or four projects funded per year at \$1-2 million per year. 91 Step-A proposals received in the last round with 10-12 going forward to Step-B proposals.
- Universities put together teams of partners to determine how to respond to any of the six thrust areas. It is important to note these are university led projects. NASA plays a supporting role.
- They are looking for innovative solutions and addressing long-term community needs.
- Next round announced spring 2020 with short Step-A proposals due June 30, 2020
- Space Grant Working Group is a vehicle for networking and building new teams.

David Kankam announced that there will be nine Faculty Fellowships at Glenn this summer. Wisconsin will represent Space Grant at AirVenture this summer.

There was no time to hold elections, so Michaela and Haim were elected by default.

Communication

Colleen Fava reported. They discussed the biggest issues: Continuity of information; Gathering information and making it available; Content creation. Some consortia are very good at getting press releases out, while others are not. Also mechanisms for generating content. They anticipate more surveys to come out in the future. The meeting went on as follows:

1. Introductions, Review, and Reboot. The past year's plans did not materialize as we had hoped. Let's re-focus our efforts on one thing at a time. First up – Adventures in Data Collection.

2. Adventures in Data Collection discussion. Topics discussed were: How do you collect data in your state? What tools do you use? (SurveyMonkey, Smartsheet, LinkedIn, EPSS, etc.) Do they differ for the types of data you collect?

a. Every state does it differently. What really works well in your state? What mechanisms do you use for collecting different types of data?

b. Idaho: spent many years trying different platforms for report collection. Started with Survey Monkey which served them well because it's online and mirrors OEPM questions for cut & paste. Also used Wufoo, would have to fill things out in one go and could upload photos and files; survey monkey got that capability, so they went back. Still using Survey Monkey, but now using SmartSheet which has a Forms capability for surveys and they are piloting that now. Student data is different because university mandated a physical/written signature from student to release the data. Smart Sheet protects PII.

c. Louisiana: piloting Microsoft 365 Forms function (data also encrypted) to collect student data. They are still doing PDFs for reports submitted by PIs.

d. Iowa: Uses Box. You can upload forms and pictures. SmartSheet is being piloted and is user friendly and has lots of capability. EPSCoR piloting SmartSheet because it's a smaller program.

e. Montana/North Dakota: Montana uses Submittable because of how secure it is. UG students work events, so they put their name in as identifiable with details about events worked in customized forms. Generates an Excel document which facilitated inputting APD info. Apply for awards through Submittable and also acknowledge their award. Notifies Chris Harmon for payment to participants. Program offers online support; 24/7 company so always available for support. Setup of forms didn't take long. Students can upload documents. Can only have so many records before you trigger a price increase.

3. Agreeing on where to store our collective knowledge. The following ideas were discussed:

a. Shared Google Drive with different folders for people to contribute how they structure their consortia, do you have advisory board and how do you choose who's on it, how do you add affiliates, bylaws for advisory board, milestone which was rated really well in your proposal, etc. so that other people can see examples to improve or try something new.

b. Folder ideas: OEPM how-to or troubleshooting, best practices for websites or social media, directory (social media spreadsheet, feedback on SmartSheet, points-of-contact at NASA), cost match how-tos, evaluation protocols, data collection tips/tricks, things to share with affiliates on how to move to mission

director model (mission director alignment examples), current solicitation folder (FAQs), upcoming events & press kits, marketing materials/PR materials (template for newsletter, media release forms).

4. Action items: a) CHF announced Sonia Greene kicking off webinars in March. CHF will collect webinar ideas and will send it to Sonia. b) Create folders on Google Drive and share link and notify the SG community when the drive has been updated; c) Create a communications working group listserv.

Human Exploration and Operations Mission Directorate

Tomas Gonzales-Torres reported. He was elected chair. The WG decided to meet more frequently and work on webinars that provide more insight into how the Mission Directorate works.

- They would like a summary from each of the Mission Directorates at the next Space Grant meeting.
- HEO specifically wants to know who Mike Kincaid will assign as the embedded person to support the HEO group. They would like a teleconference with that HEO person twice a year at a minimum to get updates on what is occurring within the HEO Directorate. These teleconferences would be scheduled in-between the Spring and Fall conferences in order to gain additional updates. So, in general we would probably be getting updates 3-4 times a year with 2 of those being teleconferences and 1-2 in-person. It might seem like a lot, but things in HEO are changing frequently and quickly with focus on the moon, lunar lander, gateway, etc.
- They would like to request a presentation from Alotta Taylor who is the POC for Education at HQ specifically for HEOMD. We're thinking this might help us get a better understanding of how the HEO working group and the universities can help HEOMD.
- HEO would also like access (or a reminder of where they are) to the videos of the center summaries; specifically for JSC, Marshall, and KSC which are the primary foci for HEO. Specifically, we are looking for opportunities and knowledge gaps to better understand where we can assist.

Science Mission Directorate

- Tom Durkin reported. 35 people attended the breakout. Tom briefly discussed the Apollo 50th survey released to all Consortia on 2/21/20 and explained it is designed to collect data on the myriad educational events conducted around the country by Space Grant on the Apollo missions (i.e., programs, locations, venues, and number of participants reached). Tom asked the survey be completed by each Consortium over the next month. The data will be incorporated into a summary report provided to NASA HQ and all Consortia.
- Kristen Erickson of NASA SMD handed out the 2020 SMD calendars and gave an update on SMD and the funding opportunities available to Space Grants. She focused on the value of NASA ROSES solicitations that are available via NSPIRES, and specifically the ROSES "Science Activation" solicitations to which we can apply. The Mars 2020 project WASGC was awarded is a good example. Kristen pointed out ROSES opportunities are always in section "E". There are some balloon and planetary solicitations available now. July 17, 2020 is launch target for Mars 2020 with landing scheduled in February, 2021. Several other upcoming big launches were discussed, along with growing concern over space weather issues and CMEs that could disrupt electronics and GPS on Earth in a significant way. Science.nasa.gov contains education data on all NASA missions and is a great source for educational use, as well as for information on solicitations. Citizen science and its importance was also discussed. How can we improve NASA SMD's reach in rural areas?
- James Harrington of Goddard provided an overview of the NASA Digital Transformation Initiative.
- For the main discussion part of the meeting, the group was asked to keep in mind the two guiding questions that Angela Des Jardins asked all working groups to consider: How should our processes change now that our awards are more aligned with the Mission Directorates? How should working groups be involved after hearing NASA's needs and then determining what universities can offer?

In discussing other SMD Working Group project ideas we could tackle in the coming year, the group discussed “barriers to entry.” Consortia should give feedback to NASA on how we can reduce the barriers to entry.

“NSPIRES is a beast” to track and navigate, but the ROSES announcements Kristen Erickson mentioned are clearly an entry point. It would be helpful if NASA HQ and the Mission Directorates advise the Space Grant Consortia how we can help. For example, if NASA identified certain educational programs regarding key missions they want communicated to the K-university and general public communities, Space Grants are perfectly suited to do that.

Tom Durkin and Robert Winglee agreed to remain as Chair and co-Chair of the working group for the coming year.

Space Technology Mission Directorate

Denise Thorsen reported. She is now the new chair of the working group. Discussions:

- They would like STMD to be more involved with our Working Group. There was no one from STMD at the meeting.
 - With STMD more involved, we could potentially get advance warning on opportunities coming down the pipe.
 - If STMD is thinking about some ideas that could affect Space Grant (i.e. challenges), we would like the ability to provide input.
 - Mission directorates detailing specific information about what is needed will allow us to better address those issues.
- Each jurisdiction should know where our center of excellence is so we can respond to specific opportunities.
- They would like to have a specific Space Grant POC in each mission directorate so we know who to speak with. Chad indicated other directorates have them, so STMD should have them as well.
- Current Space Grant proposal budget makes it difficult/burdensome to show alignment with directorates. We should know what Mission Directorates are doing. Perhaps have presentations from all mission directorates, providing state of directorate, then go into breakout sessions.
- Tim Swindle (AZ) presented an idea which would encourage collaborations (rather than competitions) across jurisdictions. Specifically, take a problem (get STMD to define a problem) with a large parameter space which is not constrained. Each Space Grant would work on a part of the problem and share their solutions, eventually making the whole bigger than its parts. Model a little like citizen science. Possible “big problems” might be:
 - Habitations – issues around oxygen, food, standardized greenhouse used by many Space Grants to run individual experiments, other issues with habitations.
 - Stratospheric ballooning.
- A lot of challenges coming out are from STMD. The list is somewhat overwhelming. There is short planning horizon for solicitations. Upcoming Eclipse could lead to collaborations.
- Possible POC: Amy Kaminski (amy.p.kaminski@nasa.gov Prizes and Challenges). Next step – start conversation with NASA. Is Amy the person to contact generally?

4:00 Meeting Conclusion and Action Items

Angela went back to meeting goals. Recharge our batteries, make the most of our in-person meetings. Time to learn from one another, make connections, and create a positive culture. As you return your badges feel free to take literature about 30th year anniversary of Space Grant. Regional chairs and Working Group chairs: please send all your notes to Angela and Haim.

Angela said it was a tremendous pleasure to have worked with us as chair for the past two years and thanked all of us. She took the circulation bell and passed it out to Luke Flynn, our incoming chair.

Luke said he learned a lot from Angela and described how Angela singlehandedly organized the Space Grant Eclipse activity. He wanted us all to thank her. A standing applause followed.

4:15 **Adjourn meeting**

Respectfully submitted,
Haim Baruh, Secretary, 10/1/2020