Space Grant
National Meeting Primer

Vermont 2018 National Meeting Edition

Preparing the community to make the most of our in-person time

Sent to the community Thursday, September 6th, 2018

Questions? Contact Space Grant Chair Angela Des Jardins at angela.desjardins@montana.edu

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Meeting logistics

Hotel
Stoweflake Resort & Spa
1746 Mountain Road (Route 108)
Stowe, VT 05672
(800) 253-2232
Mapquest for driving directions: https://www.mapquest.com/directions/to/us/vt/stowe/05672-5099/1746-mountain-rd-44.473911,-72.712020?cid=lfddlink

Hotel Meeting Rooms

Nearest Airport
Burlington International Airport
Driving directions to Stoweflake: http://mapq.st/2PPEr4o

Meeting Registration Desk Hours (Gallery; times subject to change):
Tuesday: 2:00 – 5:00 PM
Wednesday: 1:00 – 6:00 PM
Thursday: 7:00 – 5:30 PM
Friday: 7:00 – 5:30 PM
Saturday: 7:00 – 12:30 PM

Restaurants at the Stoweflake

- Charlie B's Pub & Restaurant: http://www.stoweflake.com/charliepub.aspx
- Pool Side Café: http://www.stoweflake.com/poolsidespacafe.aspx

Restaurants in Stowe
https://www.tripadvisor.com/Restaurants-g57415-Stowe_Vermont.html

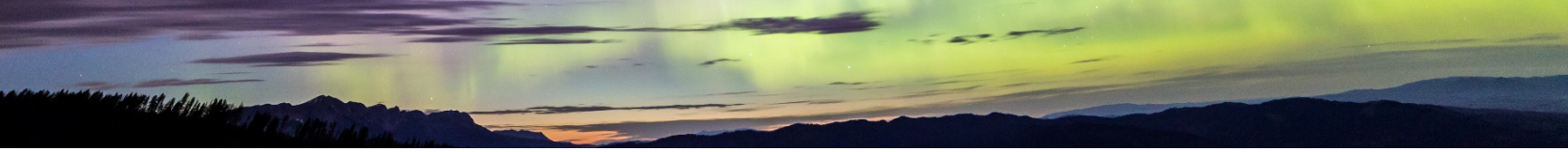
Things to do in Stowe
https://www.tripadvisor.com/Attractions-g57415-Activities-Stowe_Vermont.html

There will be a board outside of the Pinnacle room for "meet ups" and "carpooling" to the airport.

Registration Payment/Receipts
If you have not yet paid your registration fee, we can accept checks only at the registration desk (made payable to the National Space Grant Foundation), or you can follow up with Shirley Campbell of the NSGF (campbell@spacegrant.org) to pay by credit card. Please note that we cannot issue receipts at the meeting. The NSGF will take care of all receipt requests after the meeting. Onsite registration forms will be available at the registration desk for last minute registrations to the meeting and/or banquet.

National Council Executive Committee and National Space Grant Foundation Board Meetings
The ExComm and Foundation Board Meetings will take place on Thursday, September 13th in the Beatrice Room. The schedule is:
Ex-Comm Board Meeting: 8:00AM – 10:30AM (breakfast provided at 7:30AM)
NSGF Board meeting: 11:00AM – 12:45PM (lunch provided at 12:00PM)
Please note that breakfast and lunch are for Board Members only

Weather
The average temps are a high of 70 degrees with a low of 45. Remember to pack a sweater. For more information you can check the weather
channel: https://weather.com/weather/monthly/l/USVT0233:1:US



Meeting agenda

« THURSDAY, SEPTEMBER 13 »

Executive Committee Meeting (Beatrice**)**
8:00 (60) Executive Committee Meeting – Part I (Breakfast provided at 7:30 am)
9:00 (60) Executive Committee Meeting – Part II
10:00 (60) Executive Committee Meeting – Part III

National Space Grant Foundation Board Meeting (Beatrice**)**
11:00 (105) NSGF Board Meeting (Lunch provided, Board members only, at noon)

General Session: Day 1 (Pinnacle Room and Breakout Rooms)

~ Pinnacle Room ~

1:00 (10) Welcome – ***Darren Hitt*** (VT SGC), Meeting Host

Council Business
1:10 (20) Intro and Executive Committee Update – ***Angela Des Jardins*** (MT SGC), Council Chair
1:30 (10) Secretary and Treasurer's Reports – ***Haim Baruh*** (NJ SGC), Council Secretary and ***Majid Jaridi*** (WV SGC), Council Treasurer
1:40 (10) Nominating Committee Update – ***Chris Koehler*** (CO SGC), Nominating Committee Chair

Take Home Series: Performance Assessment and Evaluation
1:50 (60) Space Grant Consortia Performance Trend Data Report, ***Rick Gilmore*** – Education Programs Specialist and Evaluation Manager (NASA) and ***Dr. Catherine Graves*** – Lead Evaluation Specialist (Paragon TEC)

Council Business
2:50 (10) Council elections – ***Chris Koehler*** (CO SGC), Nominating Committee Chair

3:00 (20) **Refreshment Break (Collins Reception Area) and Networking**

Highlights
3:20 (20+5) Small State, Small Satellites – ***Dr. Ryan McDevitt***, CEO of Benchmark Space Systems (sponsored by VT SGC)
3:45 (20+5) ISU Center for space Entrepreneurship and Commerce at Florida Institute of Technology - ***Andy Aldrin*** (sponsored by the Space Grant Council and NM SGC)
4:10 (20) NASA Apollo 50th Anniversary Forum – ***Cass Runyon*** (SC SGC) and ***Pete Schultz*** (RI SGC)

Collaborations and Partnerships Breakout Session

4:30 (20) Three-minute "speed talks" in Pinnacle Room then move to breakout rooms

4:50 (40) Breakouts

- Citizen CATE 2017 Solar Eclipse Project Results and Prospects for 2024 - ***Michael Pierce,*** Citizen CATE, University of Wyoming (Stowe North)
- Space Education Webinars and Digital Learning Badges for Educators and Students **- *Araceli Ortiz***, Executive Director, LBJ Institute for STEM Education & Research (Stowe South)
- Mission: Commercial Crew and Swarmathon **– *Gloria Murphy, Rachel Power and Theresa Martinez,*** KSC education (Beatrice)
- Mobile Astronomy Resource System (MARS): Louisiana Space Grant's Signature Outreach and Informal Education Program **- *Anthony Ficklin,*** (LA SGC) (Stuart)
- NASA JSC and TSGC programs join forces to help students design a tool for use on the ISS – ***Trinesha Dixon***, JSC Internships Manager and ***Tim Urban*** (TX SGC) (Mansfield)

5:30 **Adjourn - *Free Evening – Dinner on your own***

FRIDAY, SEPTEMBER 14

General Session: Day 2 (Pinnacle and Breakout Rooms)

7:30 (60) Hot Breakfast (Collins Reception Area)
8:30 (10) Announcements and Updates

NASA Office of STEM Engagement Leadership (Pinnacle)
8:40 (120) Part I – Presentations
- ***Mike Kincaid***, Associate Administrator for Education
- ***Joeletta Patrick,*** Space Grant Program Manager (Acting) and MUREP Program Manager
- ***Erica Alston,*** ARCD Programmatic Support

10:40 (40) **Student Poster Session (Atrium – posters up all day) and Refreshment Break (Collins)**

NASA Office of STEM Engagement Leadership, continued (Stowe Rooms)
11:20 (60) Part II - Flipped Meeting discussions, session led by ***Chris Koehler*** (CO SGC)

TOPICS:
- **Apollo 50th Anniversary – sharing ideas**
- **Evaluation technical assistance planning feedback**
- **Upcoming multi-year solicitation feedback**

12:20 (20) **Pick up lunch food (Collins)**
12:40 (35+5) **Lunch Speaker (Pinnacle):** Legacy of Apollo: Meeting Challenges and Finding New Perspectives - ***Jeff Taylor***, University of Hawaii (sponsored by HI SGC)

Formal Higher Education Highlights (Pinnacle)
1:30 (15) NASA Preparation for Academia - ***Tomas Gonzalez-Torres*** (IA SGC)
1:45 (15) The CU Space Show - Breaking the mold for the large lecture classroom – ***Chris Koehler*** (CO SGC)

Working Groups
2:00 (10) Working Group overview (Pinnacle)
2:10 (50) Working Group Breakouts
- **Aeronautics Research** (Stuart)
- **Human Exploration and Operations** (Beatrice)
- **Science** (Stowe North)
- **Space Technology** (Stowe South)
- **Communication (NEW)** (Mansfield)

3:00 (20) **Refreshment Break (Collins) and Networking**

Working Groups continued (Pinnacle)

3:20 (30) Working Group Chair Reports

Space Grant Foundation

3:50 (30) ***Philippe Geubelle***, National Space Grant Foundation President (IL SGC)

4:20 (10) Open-Mic/Announcements

4:30 **Adjourn**

Optional **Walking Discussions (meet in the Atrium)**

5:15 (30) Topics

- Working with Tribal Colleges, led by ***Robert Winglee*** and ***Chris Harmon***
- Getting into CubeSats, led by ***Luke Flynn***
- RockOn and RockSat, led by ***Chris Koehler***
- Lessons Learned From 12 Years of High Altitude Student Platform Balloon Flights, led by ***Greg Guzik***, ***Doug Granger***, and ***Anthony Ficklin***
- Making STEM Accessible, led by ***Cass Runyon***, ***Caitlin Nolby***, and ***Marissa Saad***
- Group Therapy for OEPM Survivors, led by ***Susan Brew*** and ***Laura Stacko***

6:00 (120) **Reception (Poolside lawn)**

« SATURDAY, SEPTEMBER 15 »

General Session: Day 3 (Pinnacle and Breakout Rooms)

8:00 (60) Hot Breakfast (Collins Reception Area)
9:00 (10) Announcements and Updates (Pinnacle)

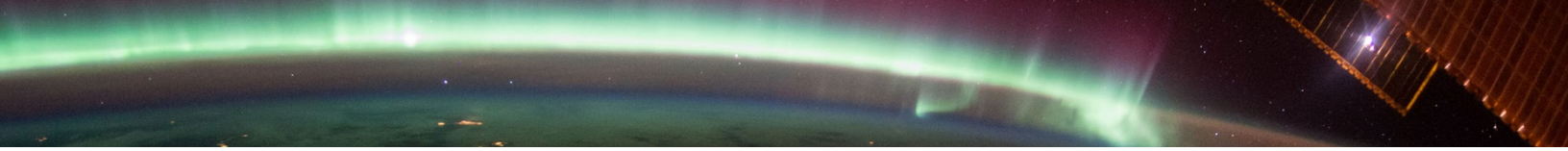
SG Regional Breakouts
9:10 (10) Charge to regions (2019 Regional meetings; discuss combining)
9:20 (70) Regional Breakout Sessions
- **Great Midwestern** (Stuart)
- **Mid-Atlantic & Northeastern** (Stowe South)
- **Southeastern** (Beatrice)
- **Western** (Stowe North)

10:30 (35) Regional Highlights (Pinnacle)

11:05 (10) Meeting Conclusion with Recap of Key Discussions, Key Decisions, Upcoming Events, and Outstanding Actions
11:15 **Adjourn Space Grant meeting** (non-EPSCoR states please take conversations to the Atrium so the EPSCoR meeting can commence)

11:15 (15) **Refreshment Break (Collins) and Networking**

NASA EPSCoR Updates
11:30 (30) Jeppie Compton, NASA EPSCoR Manager



Collaborations and Partnerships breakout session
Thursday, 9/13/18, 4:30 PM

Citizen CATE 2017 Solar Eclipse Project Results and Prospects for 2024
Location: Stowe North
Led by Mike Pierce, Citizen CATE
Description:

The Citizen CATE project was designed to engage citizen volunteers, including middle/high school students and educators, to enable a continental-wide, solar physics experiment to study the time evolution of the inner solar corona, visible only during an eclipse. The 2017 solar eclipse, the first in the continental US since 1979, passed over the entire continent enabling an unprecedented opportunity to study the inner, 1,000,000 degree solar corona and the physical mechanisms involved in its heating. Seventy observing teams across the US were trained to obtain high-definition video during the eclipse with identical equipment. We will describe the primary result of the project, a time-lapse video spanning 90-minutes of evolution of the solar corona, and some of the scientific results from the project. The success of CATE has prompted a strong interest in duplicating this effort for the next total solar eclipse in the US in 2024. Such a coordinated effort across the US would present a number of scientific as well as STEM educational and outreach opportunities.

Space Education Webinars and Digital Learning Badges for Educators and Students
Location: Stowe South
Led by Araceli Ortiz, Executive Director, LBJ Institute for STEM Education & Research
Description:

A technical platform and educational management model for developing and delivering online credentialing (badging) for massive online open courses (MOOCs) will be presented. Space education resources can reach thousands of online learners in an efficient, self-paced manner when supported by research-based instructional practices and a personal connection to educational specialists. The NASA Educator Professional Development Collaborative (EPDC) will demonstrate existing NASA EPDC online courses that can be delivered as 1-hour webinars and 6-hour “badges”. These digital courses may be taken as professional development for adult learners or as specialized science, technology, engineering and mathematics (STEM) learning modules for students. Current digital learning courses are aligned to NASA themes using the next generation science standards as a framework. Opportunities for collaboration will be highlighted.

Kennedy Space Center activities: Mission: Commercial Crew and Swarmathon
Location: Beatrice
Led by Gloria Murphy, Rachel Power, and Theresa Martinez, Kennedy Space Center education

Mission Commercial Crew Description:

NASA's Commercial Crew Program (CCP) is on the cusp of launching American astronauts on American vehicles from American soil into low-Earth orbit once again. CCP and NASA's Office of STEM Engagement are collaborating on a Next Gen STEM Pilot project which focuses on engaging students and educators in STEM through the excitement that surrounds human spaceflight and the future of commercial space travel. CCP is one of three Next Gen STEM pilot projects. Be on the lookout for information on Small Steps to Giant Leaps: Looking to the Future of NASA Aeronautics Innovation and Human Exploration Beyond Low Earth Orbit in the future.

A team of educators from NASA's Kennedy Space Center, Johnson Space Center, and Langley Research Center are working together to develop K-12 curriculum, 360 Virtual Field Trips, digital and experiential engagement opportunities for educators and students, and supplemental educator guides for the soon-to-be-released CCP app. The goal of this session is to begin the conversation with Space Grants to discuss opportunities for sharing this content within your networks, hosting launch viewing parties to spread the excitement of these high profile launches across the nation, and creating other experiences to inform and inspire through CCP. Are you ready to join the crew?

Swarmathon Description:

The NASA Swarmathon is a national competition which challenges Minority Serving Institutions to develop search algorithms for cooperative robotics. The goal is to enhance NASA's capabilities for lunar exploration in the areas of destination reconnaissance, prospecting, and mapping. This breakout session will include the unveiling of the future Swarmathon competition robot – the PUFFER! The PUFFER is a small pop-up robot which was developed through NASA's Game Changing Development Program, has the capability to scale steep inclines and small crevices, and has already been field tested in Antarctica. Learn how your state can get your MSIs involved in this exciting competition and come get a Swarmathon coin. It's time to Join the Swarm!

Mobile Astronomy Resource System (MARS): Louisiana Space Grant's Signature Outreach and Informal Education Program

Location: Stuart

Led by Anthony Ficklin, Louisiana Space Grant Consortium

Description:

The objective of the MARS program is to provide informal science education to audiences with limited access to fixed site science centers or museums across Louisiana and surrounding states. The MARS Truck itself, operated by Louisiana Space Grant (LaSPACE) staff and students at LSU, is a light commercial box truck containing computer controlled telescopes, a portable planetarium, science activity kits/demos, and other equipment and materials to provide astronomy and physics learning experiences to people of all ages at virtually any location. While

attending school and community events, MARS Program staff and volunteers have provided thousands of students and families with informal STEM education experiences.

NASA JSC and TSGC programs join forces to help students design a tool for use on the ISS

Location: Mansfield

Led by ***Trinesha Dixon***, JSC Internships Manager and ***Tim Urban*** (TX SGC)

Description:

Texas community college Lone Star College-CyFair has designed a tool that is going to the ISS, through the support of program partnership between NASA Johnson Space Center's Micro-g Neutral Buoyancy Experiment Design Teams (Micro-g NExT) and the Texas Space Grant Consortium's Design Challenge. The success of the teams from this initial collaboration will encourage continued program partnership.

NASA's Micro-g NExT challenges undergraduate students to design, prototype, and test a tool or simulant identified by NASA engineers as necessary in space exploration missions. Each year multiple challenges are offered to teams across the nation. About 20-30 teams are selected for the final testing phase where professional Neutral Buoyancy Lab (NBL) divers test the tools under the direction of the students from the Test Conductor Room of the NBL facility.

The TSGC Design Challenge provides undergraduate student teams the opportunity to propose, design, and fabricate a solution toward solving research objectives of importance to NASA and its mission. One- and two-semester projects are offered with several NASA JSC engineering divisions providing the topic challenges and mentors. About 14 teams from across Texas are supported each semester, culminating in a Design Challenge Showcase presentation event where teams receive feedback from NASA engineers and other professionals and where students compete for scholarships.

Working Groups
Breakout session: Friday, 9/14/18, 2:00 PM

Science Mission Directorate
Chair: Tom Durkin (SD)
Status and Vermont agenda:

Please come prepared to discuss the following questions:

1) From the list of NASA SMD-related educational programs and opportunities developed at the last two Working Group meetings, which ones were promoted by my Consortium this past year? How well did the promotion of that program/opportunity go in terms of participants, STEM engagement, etc?
2) What is my Consortium doing to promote the upcoming 50th Anniversary of Apollo manned spaceflight? Are we using this historical platform as a means to engage participants in NASA's current missions and opportunities? If so, how?

Human Explorations and Operations Mission Directorate
Chair: ?
Status and Vermont agenda:

This group needs to confirm or elect new leadership. We do not have a current report.

Aeronautics Mission Directorate
Chairs: Haim Baruh (NJ) and Michaela Lucas (NE)
Status and Vermont agenda:

In DC, the ARMD group primarily discussed with Ms. Karen Rugg the establishment of an Aeronautics fellowship for junior faculty. Haim and Mary Sandy gave a report on the meeting they held at HQ with Ms. Rugg. Some discussion followed about increasing collaboration between SG and ARMD.

Space Technology Mission Directorate
Chair: Mason Peck (NY)
Status and Vermont agenda:

- We spent considerable energy strategizing about the imminent absorption of STMD into HEOMD. Most of us agree that this reorganization risks dampen the successes of recent years, during which universities had returned to working with NASA on technology research after a long period of inward-facing investment tactics at the agency.
- The working group had previously considered a plan to create a portfolio, a document broadly summarizing Space Grant institutions' prospective contributions to technology at

NASA. However, program coordinators generally did not see the value and did not want to undertake the related workload. So, that plan was abandoned.

- Instead, as a way forward, the working group will reach out to individual consortium directors who expressed interest in getting their affiliates' ideas in front of NASA technology-program representatives.

Communications
Chairs: Colleen Fava (LA) and Susie Johnson (ID)
Status and Vermont agenda:

Agenda

- 2:00 pm - 2:10 pm: Introductions
- 2:10 pm- 2:25 pm: Listening session related to communications needs across the Space Grant network
- 2:25 pm – 2:40 pm: Discussion of the mission for the working group
- 2:40 pm – 2:55 pm: Discussion of goals and related actions before next meeting

Anticipated outputs:

- Documentation of communications needs for the SG community
- Mission for the working group
- Goals and near-term actions

Optional Walking Discussions
Friday, 9/14/18, 5:15 – 5:45 PM
Meet in the Atrium

Space Grant Optional Walking Discussions are informal 30 minutes sessions led by "experts" in the topic area and joined by anyone interested in learning or discussing the topic. The goals of the Walking Discussions are to: take advantage of our in-person time without getting in the way of other free-time activities, provide time for open discussion/brainstorming on a topics of interest to the community, and to get outside for fresh air and benefit from the increased brain activity created by walking. *Of course, if there is a group that would like to join the discussion but does not want to walk, they can find a spot to sit and chat instead.*

Discussion topics for Vermont session:

- Working with Tribal Colleges, led by ***Robert Winglee*** and ***Chris Harmon***
- Getting into CubeSats, led by ***Luke Flynn***
- RockOn and RockSat, led by ***Chris Koehler***
- Lessons Learned From 12 Years of High Altitude Student Platform Balloon Flights, led by ***Greg Guzik***, ***Doug Granger***, and ***Anthony Ficklin***
- Making STEM Accessible, led by ***Cass Runyon***, ***Caitlin Nolby***, and ***Marissa Saad***
- Group Therapy for OEPM Survivors, led by ***Susan Brew*** and ***Laura Stacko***

Regional Breakouts
Saturday, 9/15/18, 9:10 AM

Summaries from Spring 2018 meeting in DC

- **Great Midwestern**

Demoz Gebre (MN) reported. The Great Midwest section discussed three topics. First, the theme for the next regional meeting. The region tends to emphasize student projects at regional meetings. Second, ideas for the 50th anniversary of the Apollo missions. The group noted that they should be celebrating both Apollo 8 and 11. Suggestions for commemoration included inviting a speaker from one of the living astronauts or mission directors that participated in Apollo as the speaker at the next spring national (or fall national) meeting. Also the possibility of setting up a booth or having a presence at the FAA Air-venture Airshow in Oshkosh, WI in July/August of 2018 was discussed. Finally, the group discussed Denise Thorsen's idea of a joint, Space Grant-wide CubeSat project. They thought it would be a good way to get consortia that do not have CubeSat experience to start their own CubeSat projects.

- **Mid-Atlantic**

Dick Henry (MD) reported. The next regional meeting will be in Charleston, WV. The group also discussed ideas for the 50th anniversary of the Moon landing. The group will make a list of researchers in the region who have been involved with the Apollo project. Also, the Mid-Atlantic group will make an effort to bring more students to regional meetings.

- **Northeast**

Mason Peck (NY) reported. The Northeast region focused its discussion on the Apollo 50th Anniversary. They will begin our efforts by collecting info on the various Apollo-related events already planned in our respective states. The Massachusetts Space Grant Consortium will maintain this list as a Google Doc. At the Fall 2018 meeting, they will plan how to create a driving/walking tour of key Apollo sites in the region. Finally, they will consider how to link together science museums and other institutions for a virtual, web-based event on the day of the Apollo landing. They would be delighted to link these efforts with analogous ones in other regions, if that's an option.

- **Southeastern**

Nathan Murray (MS) reported. They discussed having a booth at the Geophysical Union meetings, the largest scientific conference in the U.S. Should there be a Space Grant display at such meetings? They also discussed the eclipse activities they were involved with, such as eclipse viewing parties. They discussed having moon rock samples for consortia to display. They also

discussed having more CubeSat activities, such as measuring the earth's magnetic phase or IONS. NS SGC has partnered with local libraries to create summer reading for the Apollo anniversary. Other recommendations include astronomy clubs, solar system ambassadors, local planetariums, and moon tree locations (trees planted from seeds taken on Apollo missions). The Fall 2019 meeting will be at Nashville.

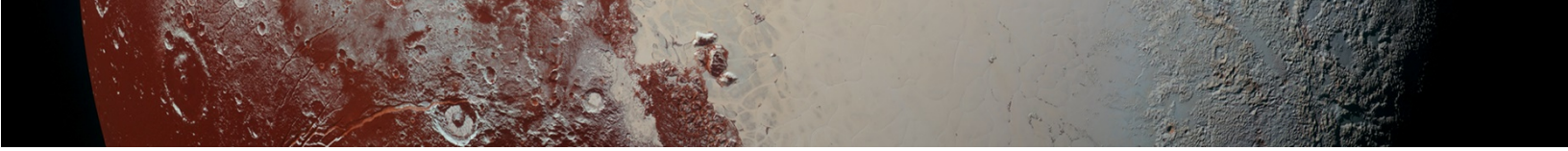
- **Western**

John Kosmatka (CA) reported. The 2019 Western Regional meeting will be held in Montana. The theme will focus on scientific results and lessons learned from the 2017 Solar Eclipse event.

During the breakout session, each of the 20 states presented 2017 highlights along with their ballooning and CubeSat activities, as well as new initiatives they would like to share. Over 15 CubeSat programs are underway with more to follow. Many of the states work closely together on a variety of space grant related projects. Their newest member, Guam, recently purchased the NASA Apollo Ground Station Facility on Guam from the US Government, which will now be used for various space related activities (teaching, museums, etc). Hawaii presented an overview of their 2018 workshop.

Oregon mentioned that during a recent Space-X launch, a photograph of the Space-X control room contained at least three Oregon Space Grant alumni. A need to better understand the role that Space Grant plays with Space-X's success.

There was a large variety of suggestions for the 50th anniversary of the Apollo moon landing, ranging from Space parties, to fake moon landings, to launching 50 CubeSats, etc. It was agreed that one project should be developed and promoted that best focuses on the involvement of all the Space Grant members.



Upcoming meetings

Spring 2019 National Space Grant Meeting
Thursday, February 28 – Saturday, March 2
Westin Crystal City, Arlington, VA

Fall 2019 Western Regional Meeting
Montana

Fall 2019 Southeastern Regional Meeting
Nashville

Fall 2019 Great Midwestern Regional Meeting
?

Fall 2019 Northeastern & Mid-Atlantic
?

Meeting attendees

Organization	Name	Email
Alaska Space Grant Program	Denise Thorsen	dlthorsen@alaska.edu
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