

Welcome to the North Dakota Space Grant 14th Annual Affiliates Meeting

March 22-23, 2019



Host: John Webster
Minot State University
Minot, ND

Jim Casler
Director

Caitlin Nolby
Deputy Director

Marissa Saad
Coordinator



Good Morning!

Saturday, March 23, 2019

Agenda – Saturday, March 23, 2019

- ▶ *Today, we're going to:*
 - ▶ *Enjoy some breakfast*
 - ▶ *Hear from Marlin about future SG Goals*
 - ▶ *Listen to three student presentations*
 - ▶ *Phew, take a break, and quick – take a group photo!*
 - ▶ *Last but not least, hear about four more experiences*
 - ▶ *Are you hungry? Lunchtime!*
 - ▶ *Business Meeting (for all!) Good things are happening!*
 - ▶ *Reimbursements!*



Future NDSGC Projects

- ▶ Virtual Reality
- ▶ UND Atmospherium
- ▶ Challenger Center with Gateway to Science Center
- ▶ Lunar Rocks
- ▶ Great Lunar Expedition for Everyone (GLEE)



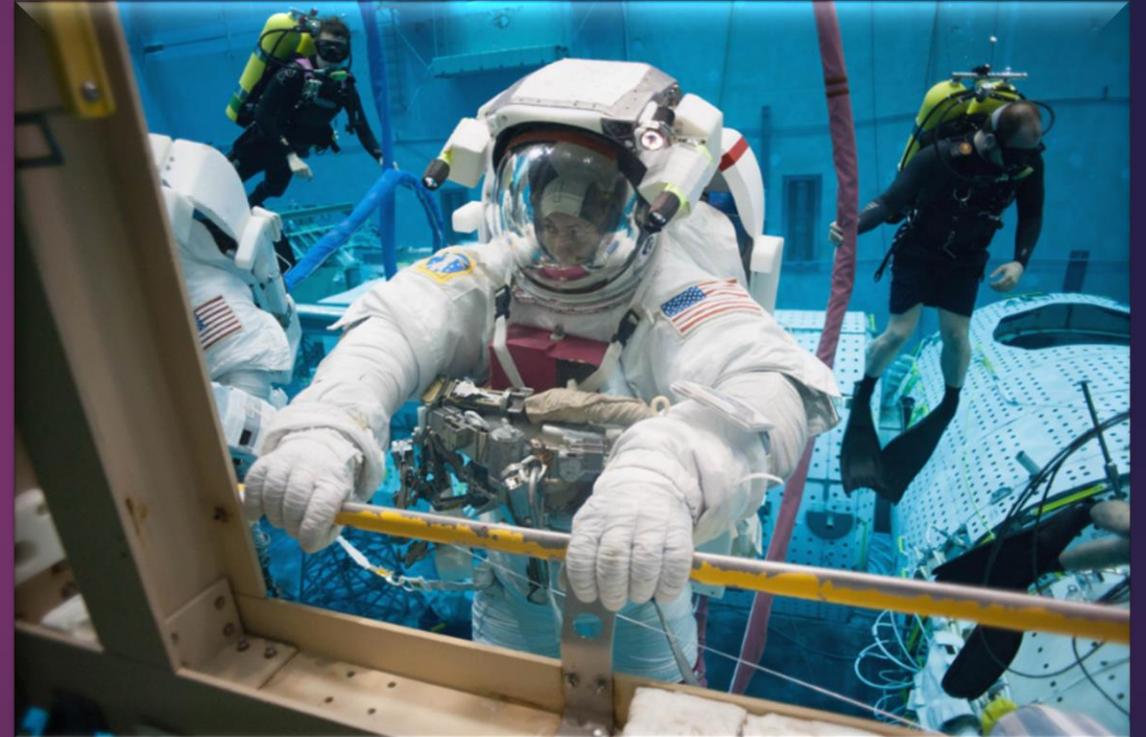
Virtual Reality – NASA CCP

- ▶ NASA's Commercial Crew Program (CCP)
 - ▶ Developed content of virtual tours of KSC and JSC
 - ▶ 360 camera



Virtual Reality – NASA CCP

- ▶ NASA's Commercial Crew Program (CCP)
 - ▶ Vehicle Assembly Building (KSC)
 - ▶ Neutral Buoyancy Laboratory (JSC)



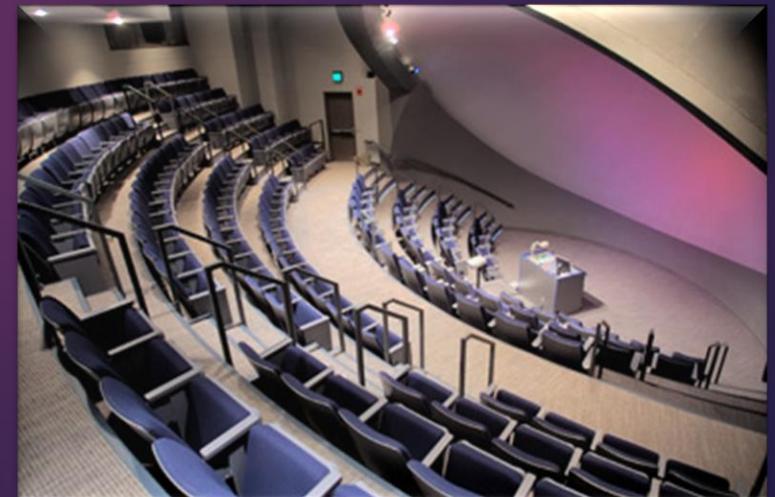
Virtual Reality – NASA CCP

- ▶ NDSGC is one pilot program for Virtual Reality Headsets
- ▶ Training in Omaha, Nebraska
 - ▶ May 17-18, 2019
 - ▶ Plan to bring Education Affiliate – any interest?
- ▶ Set of 30 Oculus Go headsets
 - ▶ Content can be viewed on Google Expedition and Samsung Gear VR
- ▶ Teacher Training & Lending Program across ND
- ▶ Program is supplemented with hands-on activities for K-12 levels
- ▶ Potential to expand for College-level use



UND Atmospherium

- ▶ Planetarium installed early January 2019
- ▶ “Grand Opening” Feb. 2, 2019
- ▶ World Viewer and Open Space software
- ▶ Any expert advice? (VCSU, DCB)
- ▶ Student fellowship for Summer 2019 for content and tutorial development
 - ▶ Develop content with other Aerospace departments
 - ▶ 360 videos associated with VR headsets
 - ▶ Take “Trip to UND” for rural communities
- ▶ Field Trips associated with Human Spaceflight Laboratory
 - ▶ Space suits, spacecraft simulators, rover, habitat
 - ▶ Currently limited with only one UND STEM Ambassador



Challenger Center

- ▶ Conversations ongoing
- ▶ Potential for Bismarck, ND location
 - ▶ Gateway to Science Center
- ▶ College student opportunities?
 - ▶ STEM Ambassador positions specific to center (BSC, UTTC students)
 - ▶ Summer position open to students from all affiliate institutions
- ▶ Middle school student focus (programming for all K-12 levels)
- ▶ Mission-based learning
- ▶ [Quick Video](#)



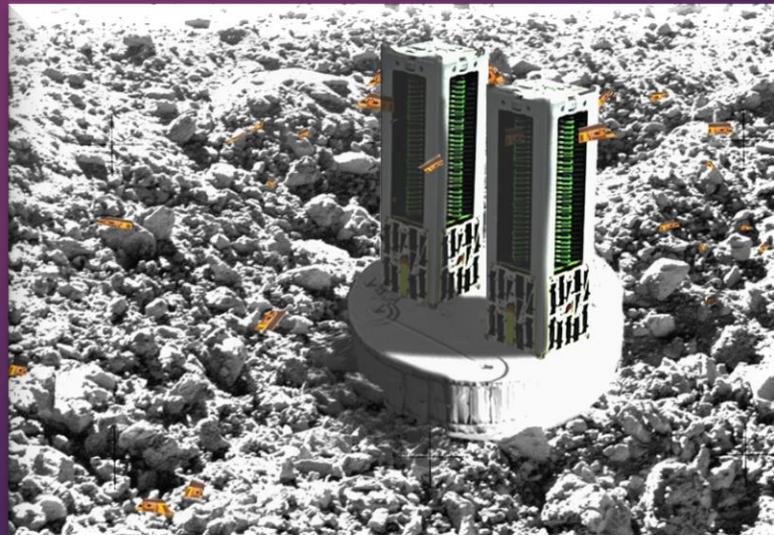
Lunar Rocks

- ▶ Saad and Nolby: Certified in handling lunar rocks at SEEC 2019
- ▶ NDSGC now in position to incorporate into existing activities:
 - ▶ Teacher Workshops
 - ▶ Space Camps
 - ▶ Recruiting events (career fairs)
- ▶ Are other affiliates certified?



GLEE – Great Lunar Expedition for Everyone

- ▶ Goal: By December 14, 2022, 500 five gram LunaSats, built by students from every nation on Earth, shall land on the Moon to conduct multiple distributed science and technology missions while engaging the world's next generation of space explorers.
- ▶ LunaSats launched on CubeSats
 - ▶ Flexible spacecraft with: power, communications, sensors: GPS, accelerometer, magnetometer, gyroscope, temperature, UV, pressure
 - ▶ 5 gram, 35 x 35 x 1 mm
 - ▶ Arduino-based
- ▶ Four Teams:
 - ▶ 1. Getting There
 - ▶ 2. Landing There
 - ▶ 3. Discovery There
 - ▶ 4. "Inspirgagage"



GLEE – Great Lunar Expedition for Everyone

▶ Proposed Timeline:

- ▶ July 2019: Announce GLEE and teams can indicate interest
- ▶ Jan. 2020: Program Kickoff and signup
- ▶ Dec. 2021: LunaSats arrive for integration
- ▶ Oct. 2022: CubeSat integration complete
- ▶ Dec. 2022: Ready for launch!

▶ Involvement:

- ▶ College student teams
- ▶ Faculty mentors
- ▶ K-12 students and teachers
- ▶ NDSGC Goal: Statewide participation



Student Presentations