



Lunar Surface Innovation

C O N S O R T I U M

Extreme Access Focus Group Telecon

August 13, 2020

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JOHNS HOPKINS
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Today's Agenda

- Capabilities Database Announcement
- Communications
- Fall Meeting Announcement
- Summary of survey results
- Presentation from NASA, Terry Fong
- Open floor and Discussion

Updates on Communications

- Monthly LSIC newsletter – second edition came out last week
 - <http://lsic.jhuapl.edu/Resources/>
 - Mailing list
 - The listserv goes to all participants. Use with caution. But feel free to use!
 - If we need smaller, focused lists we can set those up
 - Follow the Code of Conduct, found on the Resources webpage
 - Updates to the webpage - <http://lsic.jhuapl.edu/Focus-Areas/Extreme-Access.php>
 - Notes, slides, recordings from telecons posted here
 - Wiki is nearly ready!
 - We are creating pages and structure at APL
 - Will be open for general usage soon
 - Additional communications tools
 - Do we need something in the meantime?
-
- Follow the Code of Conduct for all Focus Group communications

Fall Meeting Announcement

- Dates: October 14-15
- The event will feature interrelationships between the six focus areas identified by the Consortium, especially in the context of surface power.
- Day 1: Key notes and plenary sessions
- Day 2: Small group discussions, focus-area specific technological needs, interrelationship between focus areas
- Abstracts desiring technical capabilities within the LSIC focus areas or identifying lunar surface technology needs/technology readiness
- Abstracts due September 11

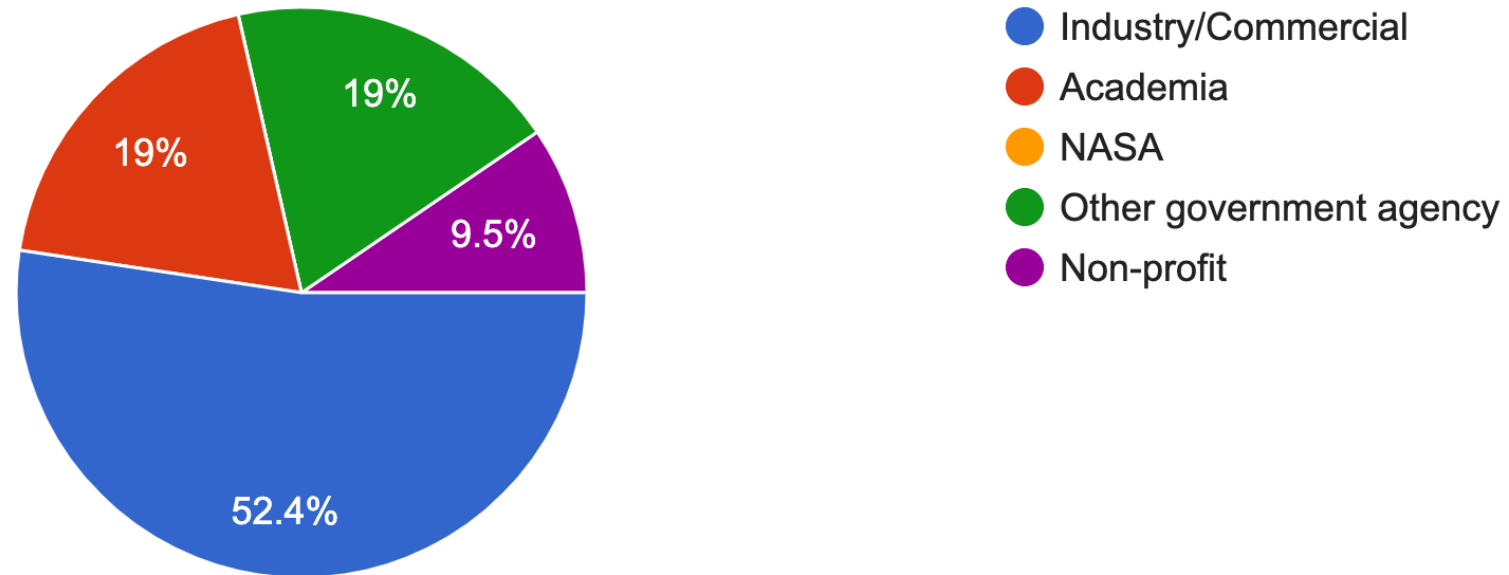
Questions to consider

- “For a scenario where a site at the lunar South Pole will support multiple landings, in context of Extreme Access technologies, what are the implications for power generation, storage, and transport?”
- “What architectural aspects of this scenario would NASA need to bring? What can industry contribute?”
- --We’ll discuss at the end of today if there is time, otherwise, this will be a main focus of our September meeting!

Who we are.. In more detail

I primarily work in...

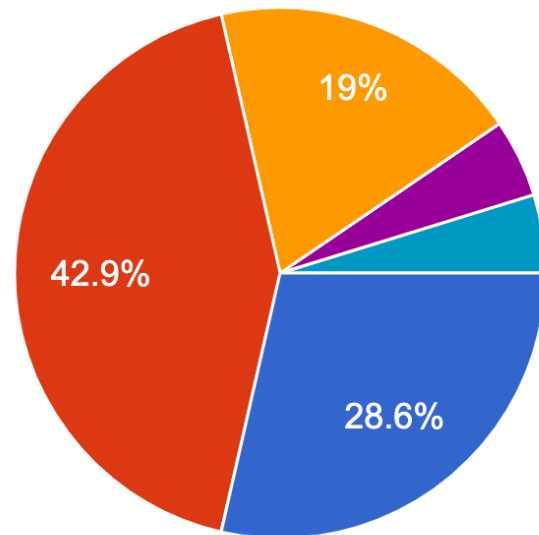
21 responses



Who we are.. In more detail

I am primarily...

21 responses

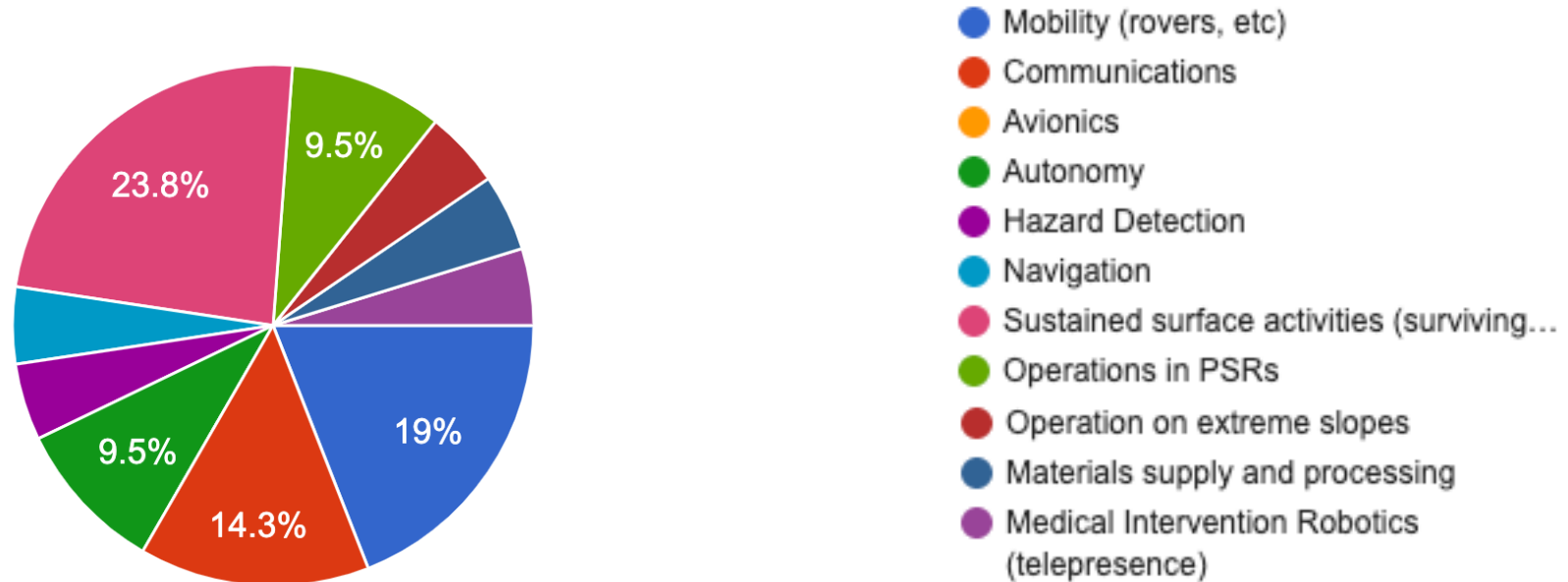


- A developer of technology
- A user of technology (e.g., mission development, operations, science, etc)
- Interested in learning about new technology
- A funder of technology development
- A tester of technology
- All the above

Technology Categories

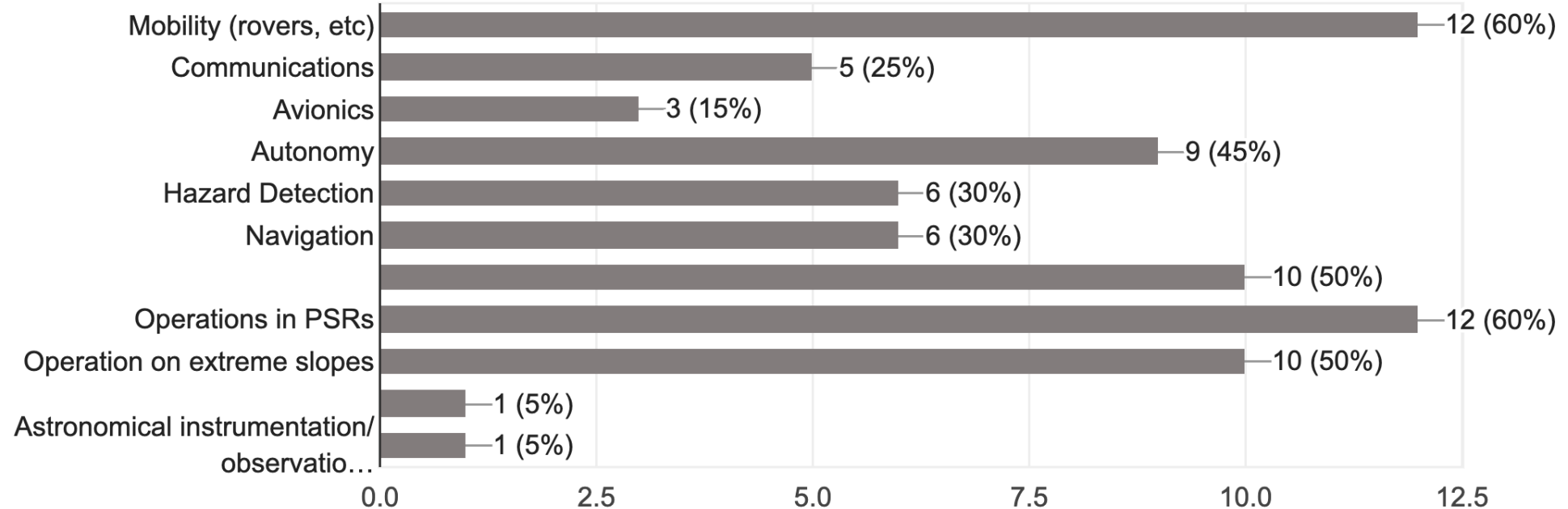
The primary type/category of technology I develop/am interested in for Extreme Access on the lunar (sub)surface is:

21 responses



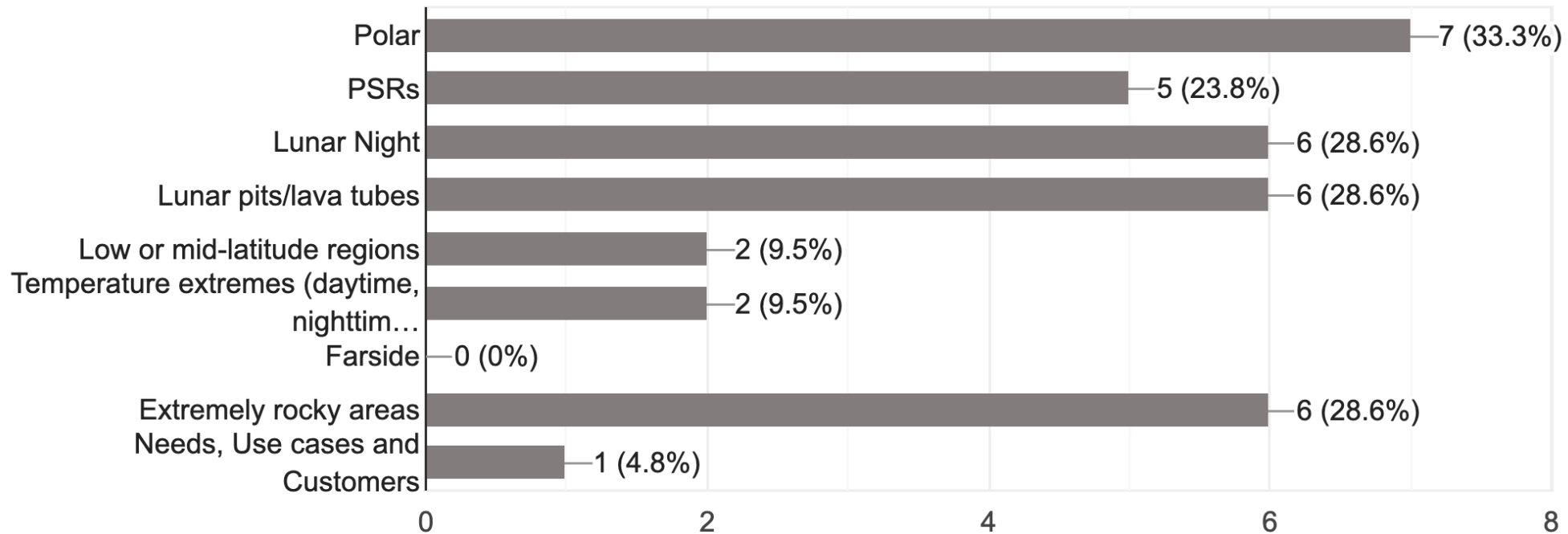
Additional types/categories of technology I develop/am interested in for Extreme Access on the lunar (sub)surface is (check all that apply):

20 responses



The general environment we should focus on for year 1 goal discussions is (please pick up to 2):

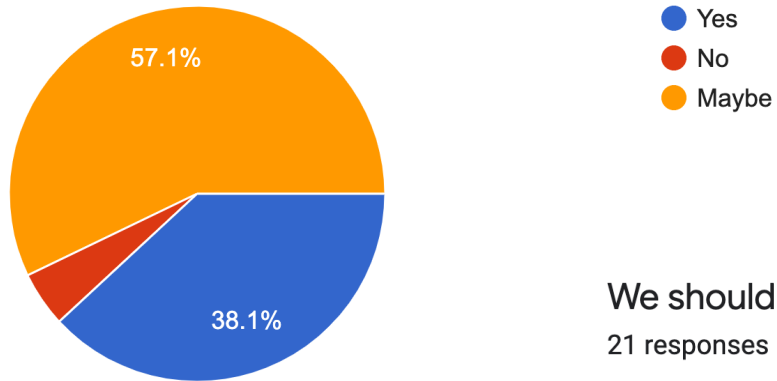
21 responses



Split Opinions on Subgroups

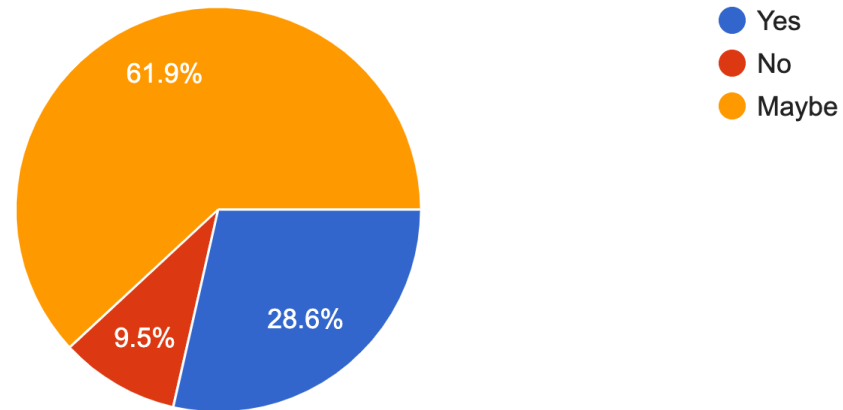
We should have defined subgroups for different types of technology needs (e.g., communications or navigation or...)

21 responses



We should have subgroups to focus on technology for different environments

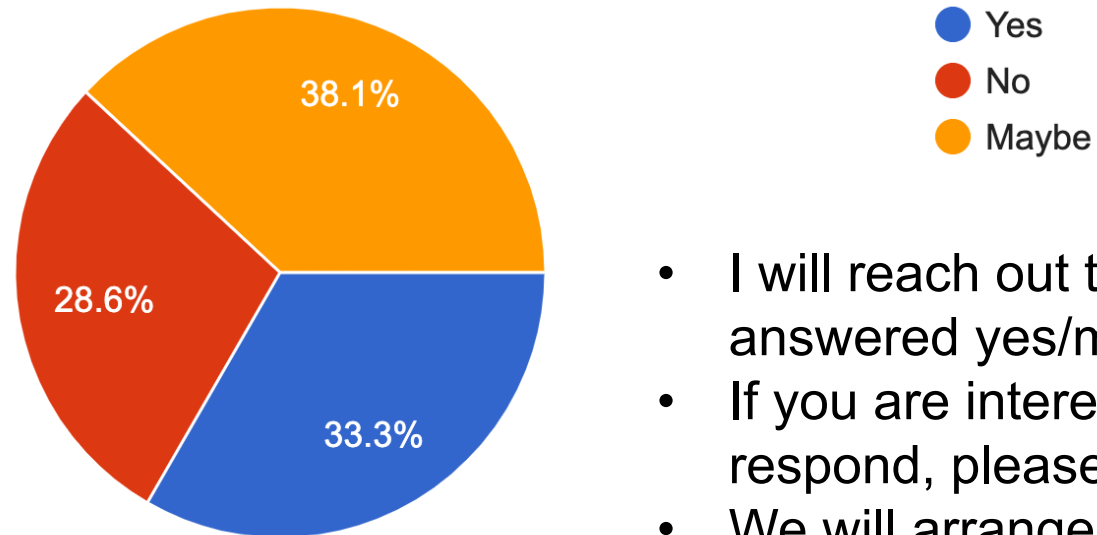
21 responses



Future telecons will have short presentation slots

Would you be interested in giving a short presentation/overview to the group about your work in the future?

21 responses



- I will reach out to those of you who answered yes/maybe.
- If you are interested and did not respond, please email me!
- We will arrange a schedule of short presentations each month

Presentation from Dr. Terry Fong

NASA POC for Extreme Access Focus Group

Upcoming Meetings

- Focus Group Telecons (2nd Thursday each month, 3-4 pm EDT)
 - August 13, 2020
 - September 10, 2020
 - No October telecon – Fall meeting
 - Revisit time after fall meeting?
- Lunar Surface Science Workshop (Dust and Regolith) August 20
 - Register by August 17: <https://www.hou.usra.edu/meetings/lunarsurface2020/registration/>
- LSIC (virtual) Fall Meeting, October 14-15 2020
 - Registration will close sometime in September, so keep an eye out!

STMD Opportunities for Academia and Industry

STMD anticipates awarding ~\$600M to academia and industry supporting 2020 solicitations & awards

STMD Tipping Point Multiple Awards: *Jan – Mar 2020*

\$250M

Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Phases I, II, II-E, Civilian Commercialization Readiness Pilot Program (CCRPP), Sequential: *Phase I Solicitation Jan – Apr 2020*

\$212M

Announcement of Collaborative Opportunity (ACO): *Jan – Mar 2020*

\$10M

Flight Opportunities Tech Flights: *Feb – May 2020*

\$10M

Early Career Faculty (ECF): *Feb – Apr 2020*

\$6M

Early Stage Innovations (ESI): *Apr – Jun 2020*

\$9M

NASA Innovative Advanced Concepts (NIAC) Phases I, II, III: *Phase I Solicitation Jun – Jul 2020*

\$4M

Space Technology Research Institutes (STRI): *Jun – Aug 2020*

\$30M

NASA Space Technology Graduate Research Opportunities (NSTGRO): *Sep – Nov 2020*

\$19M

SmallSat Technology Partnerships (STP): *Sep – Nov 2021*

\$3M

Centennial Challenges: *Varied release dates*

\$8M

NextSTEP Broad Agency Announcements (BAAs): *Varied release dates*

Varies

Lunar Surface Technology Research (LuSTR) Opportunities: *Coming soon!!!*

\$30M

Note: Funding awards are approximate and subject to change

Open Solicitations as of June 5, 2020

Solicitations were/will be open in the timeframe specified in italics

Lunar Surface Technology Research (LuSTR) Opportunities

University-led efforts to develop and mature technologies that address high-priority lunar surface challenges

Technical Characteristics:

- Unique, disruptive or transformational lunar surface technologies: *in situ* resource utilization, sustainable surface power, extreme access, extreme environments, surface excavation and construction, and lunar dust mitigation
- Low to mid Technology Readiness Level (TRL): TRL 2-5
- Post-award infusion opportunities

Eligibility

- Organization submitting proposal must be an accredited U.S. university
- PI must be a professor at the submitting university; co-Is are permitted
- $\geq 60\%$ of budget must go to accredited U.S. universities
- Up to 40% paid teaming with other universities, industry and non-profits encouraged

Award Information

- Expected duration: **2 years**
- Anticipated awards (inaugural solicitation): **10-15 awards** valued at up to **\$1-2M** each
- Oversight: Annual reviews and semi-annual briefings at LSIC meetings
- Award instrument: Grants
- Release Date: **July 2020**

- Current Funding Opportunities:
 - Lunar Surface Technology Research (LuSTR)
- NASA/NAS Planetary Science & Astrobiology 2023-2032 Decadal Survey white papers
 - “Community input in these areas and related activities—including, theory, computing, **technology development**, laboratory studies, planetary defense, **and human exploration activities**—are critical for the success of the survey.”
 - Science white papers due July 15
 - Mission concepts due August 15
 - Technologies, infrastructure, etc. due September 15
 - <https://www.nationalacademies.org/our-work/planetary-science-and-astrobiology-decadal-survey-2023-2032>



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Extreme Access	LSIC_ExtremeAccess@listserv.jhuapl.edu	Angela Stickle
Excavation and Construction	LSIC_ExcavationConstruction@listserv.jhuapl.edu	Athonu Chatterjee
Dust Mitigation	LSIC_DustMitigation@listserv.jhuapl.edu	Jorge Núñez