Lunar Surface Innovation
CONSORTIUM

Extreme Access Focus Group Telecon

September 10, 2020

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Today's Agenda

- Communications Update
  - Confluence Announcement and Showcase
- Focus Group Organization
- Fall Meeting Discussion
- Upcoming Opportunities
- Open floor and Discussion

Communications

- Monthly LSIC newsletter – third edition came out last week
  - Extreme Environments Focus Group spotlight
  - 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!
  - Confluence is free to you and available to all registered LSIC members
  - Each Focus Group has it's own "section"
  - EA pages are up and ready for use!
  - To request an account, please email Andrea Harman: ams573@alumni.psu.edu
  - Brief trainings are available if you want help getting acclimated

Follow the Code of Conduct for all Focus Group communications

Quick Confluence Demo

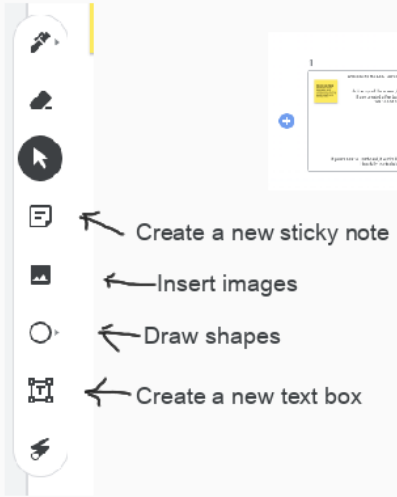
Jamboard!

We can use these boards for open discussion and collaboration during meetings (Angela Stickle, APL)

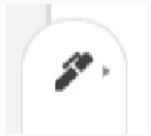
Remember to sign your sticky :)

Welcome to the LSIC Extreme Access Focus Group Jam!

At the top of the screen, there is a board navigator. I have created a few boards to start. Please feel free to add one if you want to increase the discussion.



If you are on a touch screen, you can use the pen and a stylus
(or use your mouse to draw things)



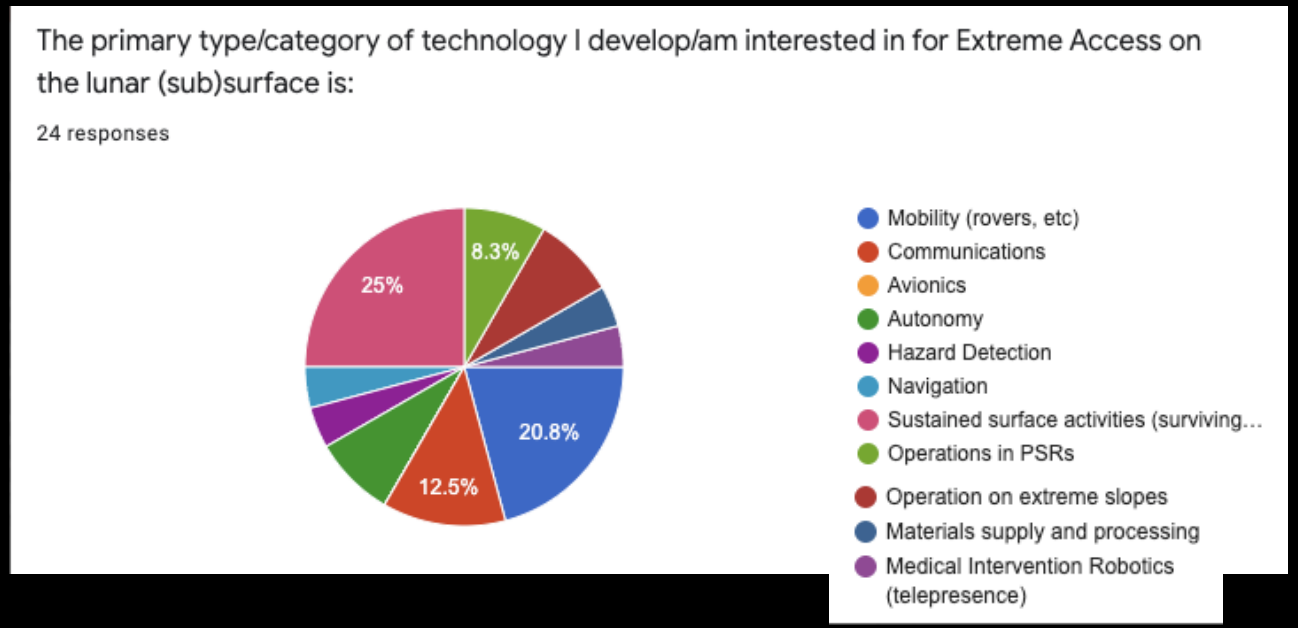
Please be nice. Don't delete other people's stickies. Also, follow the LSIC Code of Conduct.

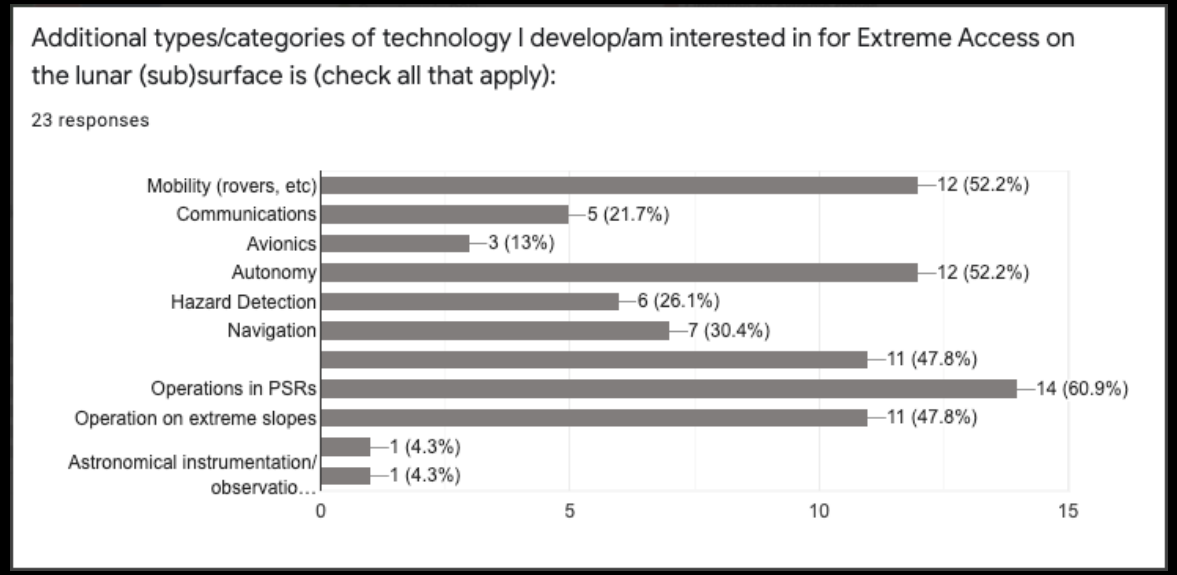
If you're new to Jamboard, it works like many other google apps. Hopefully the tools look familiar.

https://jamboard.google.com/d/1dcSaOzbSdMWvNVr6ERewAmLbZDjlkfsyOwvow_Pc_VA/edit?usp=sharing

Focus Group Organization

- "Extreme Access" is a broad term that covers many technology types
- We have a variety of expertise in the group
- To facilitate discussions and focused work going forward, we will be creating smaller subgroups





Possible subgroups – Environment theme

- Operation in PSR
  - Communications technology,
  - Power technology
  - Low-light operations,
  - Entry/exit on slope or pinpoint landing
- Steep Slopes
  - Entry/Exit craters or lunar pits, climbing peaks
- Hazards
  - Extremely rocky terrains
  - Active hazard avoidance, Terrain Relative Navigation (TRN)

Let's Jamboard!

Possible subgroups – technology category

- Mobility
- Communications
- Avionics
- Autonomy
- Navigation, Hazard Detection
- Surviving lunar noon/night

Fall Meeting

- 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.
- Draft Agenda is up! http://lsic.jhuapl.edu/Events/102.php?id=102

- Abstracts desiring technical capabilities within the LSIC focus areas or identifying lunar surface technology needs/technology readiness
- Abstracts due September 11

Questions to consider

- What does sustained presence look like?
- What does it take to get us there?

- “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?”

Upcoming Meetings

- Focus Group Telecons (2nd Thursday each month, 3-4 pm EDT)
  - September 10, 2020
  - October telecon, TBD
  - Revisit time after fall meeting?
- Annual Meeting of the Lunar Exploration Analysis Group (LEAG) 9/14-16
  - https://www.hou.usra.edu/meetings/leag2020/program/
- Lunar Surface Science Workshop
  - Planetary Protection/PSR Classification (9/30)
  - Science Enabled by Mobility (10/28)
  - Abstracts being solicited, due 9/10 5pm CDT
- LSIC (virtual) Fall Meeting, October 14-15 2020
  - Abstract deadline 9/11
  - Registration open!

Other Notes of Interest

- Current Funding Opportunities:
  - Vertical Solar Array Technology (due 11/16)
    - https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId=%7b68A7EFE3-1B4F-5AA1-A169-119D97C8DB8F%7d&path=open
  - Centennial Challenge: “Break the Ice” RFI open for comment
    - https://beta.sam.gov/opp/ad1374870a9f4fa382ce89437aa38fc7/view
    - Goal: enable new solutions for autonomous lunar icy regolith excavation technology

- 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

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*

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Contact information

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