



Lunar Surface Innovation

C O N S O R T I U M

Extreme Environments Focus Group September Telecon

September 8, 2020

Dr. Benjamin Greenhagen
Planetary Spectroscopy Section Supervisor
Johns Hopkins Applied Physics Laboratory

Facilitator_ExtremeEnvironments@jhuapl.edu



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Today's Agenda

- Focus Group Updates (Ben Greenhagen)
- Task 1 Overview (Ben Greenhagen)
- Task 1 Subgroup Updates & Discussion
 - Thermal Environment (Ahsan Choudhuri)
 - Illumination Environment (Craig Peterson)
 - Radiation Environment (Lawrence Heilbronn)
 - Vacuum Environment (Stephen Indyk)
- Confluence Wiki Demo & Discussion

Capabilities Database Survey: <https://forms.gle/GXb7TuVYa23qnVp96>

Focus Group Updates

- *Communications Environment subgroup (Lead: Marshall Eubanks) is migrating to the Extreme Access Focus Group!*
 - *Non-architecture aspects of the lunar environment that affect communications should be considered in other subgroups*
- We are getting assigned a new NASA POC
 - Thank you to Mark (who will continue to support structures and materials concerns)
- NASA Strategic Technology Plan
 - Gave feedback to SpaceTech that there was a lot of interest generated by Mark's presentation at our August meeting
 - Result: There will be a general description of the STP process, including 13 technology areas, and how LSIC can participate in the process at the LSIC Fall Meeting!

Fall Meeting Update I

- Dates: October 14th and 15th, 2020
- Venue: Virtual (hosted by Arizona State University)
- Information: The Lunar Surface Innovation Consortium (LSIC) fall meeting will be held virtually on October 14th and 15th. The event will feature interrelationships between the six focus areas identified by the Consortium, especially in the context of surface power. Day one of the meeting (October 14th) will feature key note addresses and LSIC-wide plenary sessions, including a poster session. Day two (October 15th) will delve more deeply into technology areas, including smaller group discussions, focus area-specific technological needs, and interrelationships among the LSIC focus areas.

Fall Meeting Update II

- Call for Abstracts: We invite abstracts describing technical capabilities within the six LSIC focus areas, as well as those that identify lunar surface technology needs and assess the readiness of relative systems and components. Other topics of interest include defining the parameters and constraints of the architecture required to support a sustained presence on the lunar surface, as well as economic and policy considerations.
- The abstract submission portal will open on August 17th, and all abstracts are due by **11:59PM EDT on September 11th**. Abstracts should be submitted in pdf format, and are limited to 1 page, including any figures and tables, at no smaller than 10-point font (and 1-inch margins). Contributed abstracts will be presented as posters or as short lightning talks. A template will be provided when the submission portal opens.
- **Fall Meeting will be focus of October telecon, likely moving from Oct. 13 to Oct. 6**

Task 1 Overview

Goal: Define lunar extreme environments relevant to enabling systems to survive and operate throughout the full range of lunar surface conditions

- *Capture primary environment characteristics and variability on the Moon.*
 - *Identify environmental challenges to technology development.*
 - *Include all environment categories intrinsic to survival and operation.*
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- Kickoff Product: Quad chart presented at a FG monthly telecon (*July 14 or later*). Signals the start of the task.
 - Review Product: Short presentation that defines the environment category based on the work of the subgroup. Guides ~15 minute discussion at a FG monthly telecon (*August 10 or later*).
 - Archive Product: Revised version of the Review Product and 1-2 pages of text for the focus group wiki.

Task 1 Subgroup Updates

- *Illumination Environment (Craig Peterson, craig@transastracorp.com)*
- *Radiation Environment (Lawrence Heilbronn, lheilbro@utk.edu)*
- *Thermal Environment (Ahsan Choudhuri, ahsan@utep.edu)*
- *Vacuum / Exosphere Environment (Stephen Indyk, SJIndyk@honeybeerobotics.com)*

Please contact subgroup leads to get involved!



Subgroups Without Leads

Need to identify leads for these subgroups ASAP

- *Solar Wind / Plasma Environment (nearside, farside, polar, etc.)*
- *Other External Hazards (seismicity, micrometeorites, CMEs, etc.)*

These categories need to be refined to focus on intrinsic aspects of the lunar surface environment and avoid topics primarily covered in other focus groups

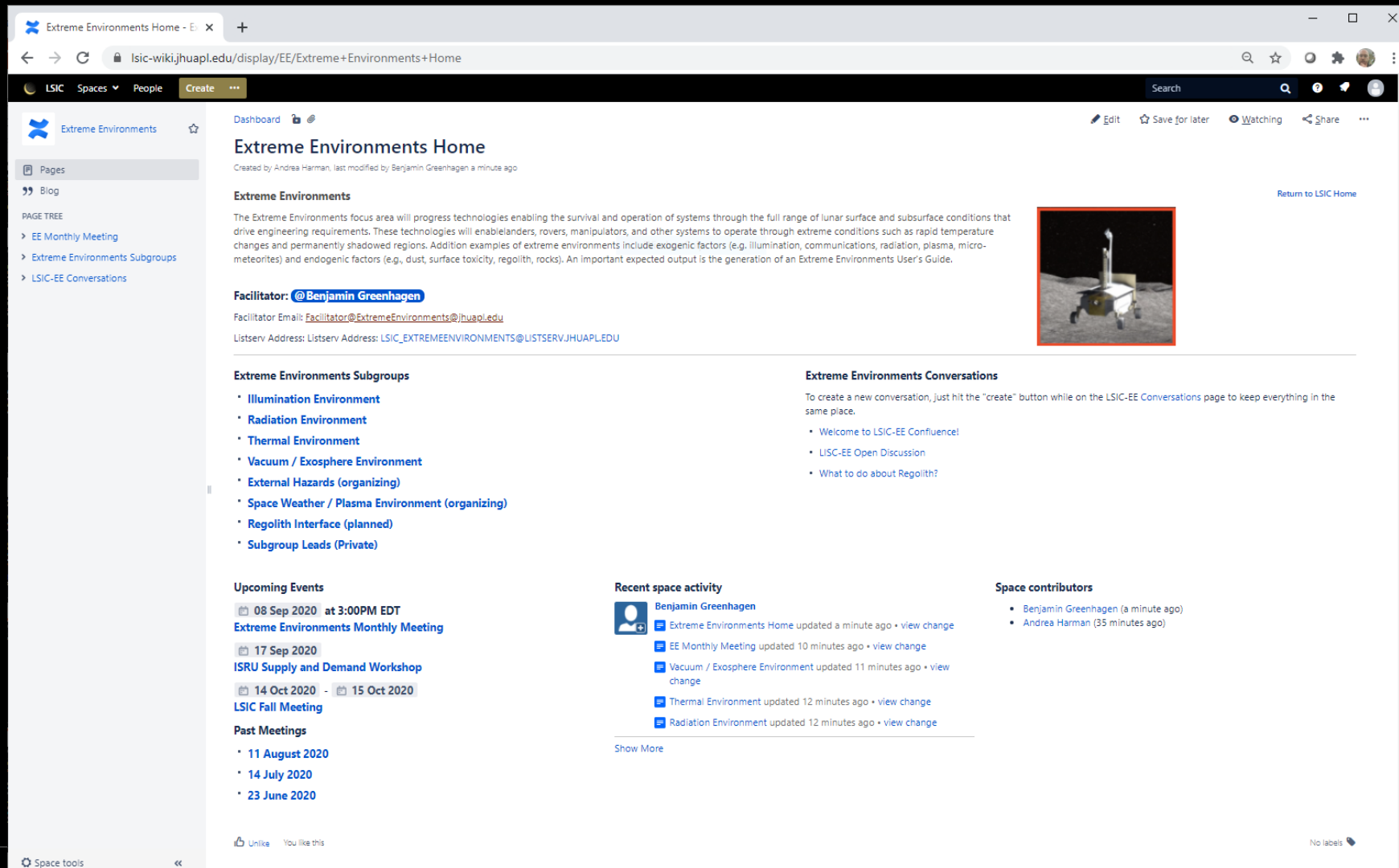
- *Regolith (Surface?) Interface (glassiness, organics, regolith toxicity, rocks, etc.)*
 - *Coordinate with Excavation & Construction, Extreme Access, and Dust Mitigation focus groups*
 - *Interest in workshop series amongst facilitators for late Fall or Winter*

Contact Ben (Facilitator_ExtremeEnvironments@jhuapl.edu) with comments or to volunteer

- Or to anonymously nominate someone to lead these groups!

Confluence Demonstration

- Please contact Andrea Harman (ams573@alumni.psu.edu) to get set up with an account!



The screenshot shows a web browser displaying the 'Extreme Environments Home' page on the LSIC Confluence. The page includes a navigation sidebar with 'Pages' and 'Blog' sections. The main content area features a title 'Extreme Environments Home', a description of the focus area, a list of subgroups (Illumination, Radiation, Thermal, Vacuum/Exosphere, External Hazards, Space Weather, Regolith Interface, Subgroup Leads), and a list of recent space activity updates from Benjamin Greenhagen. There are also sections for 'Upcoming Events' and 'Space contributors'.

<https://lsic-wiki.jhuapl.edu/display/EE>

Confluence Discussion

- Please use the raise hand feature (preferred)
- You can also comment in chat

- What information would you like to find on the wiki?
 - Contact information
 - Task/activity status updates, working area, and file hosting
 - Calendar
 - Discussions
- What discussions are most important to get started on the wiki?
 - Welcome to Confluence
 - Open Discussion
 - What to do about regolith?
- What would inspire you to interact with the wiki regularly?



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