Lunar Surface Innovation Consortium

LSIC Excavation and Construction Monthly Meeting

http://lsic.jhuapl.edu/

September 28, 2022

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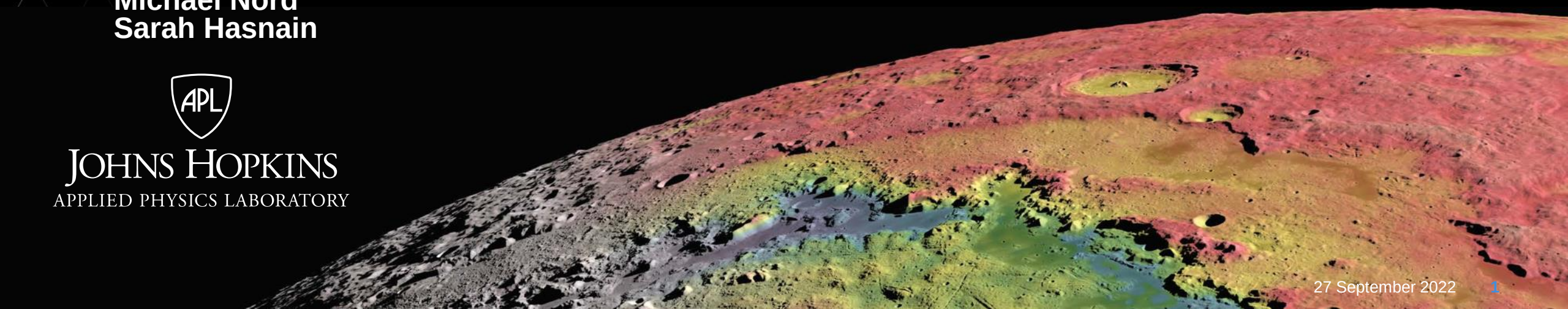


Friendly Reminders

- Recordings will be posted on our website.
  (http://lsic.jhuapl.edu/Focus-Areas/Excavation-and-Construction.php)
- Please post your questions in **‘chat’ .**
- Mute yourself if you are not speaking.

Focus Group Announcement

- October meeting cancelled because of ASCEND (Oct. 24-26) and LSIC fall meeting the week after.

- November monthly meeting moved to Nov. 30 (Wednesday) because of Thanksgiving.

Today's Agenda

- LSIC, NASA updates and news.
- Frank Koch, Orbit Recycling (Berlin, Germany): *Turning Waste into Value: Recycling Space Debris to Build Lunar Infrastructure*
- Break-out sessions moderated by sub-group leads.
  - Subgroup #1 – Autonomy & Site Planning (Dr. Alhassan Yasin)
  - Subgroup #2– Additive Manufacturing, Raw Materials (Dr. Nilanjan Mitra)
  - Subgroup #3 – Site Prep, Horizontal & Vertical Construction (Roberto de Moraes)
  - Subgroup #4 – Outfitting & Maintenance (Miguel Coto)

NASA 2023 Big Idea Challenge

In support of the Artemis program, NASA is looking for innovative and cost-effective technologies and systems that will enable the manufacture of lunar infrastructure from ISRU-derived metals found on the moon.

NASA's BIG Idea Challenge

2023 Theme - Lunar Forge: Producing Metal Products on the Moon

The Breakthrough, Innovative, and Game-Changing (BIG) Idea Challenge is managed by the National Institute of Aerospace (NIA) on behalf of the National Aeronautics and Space Administration (NASA)

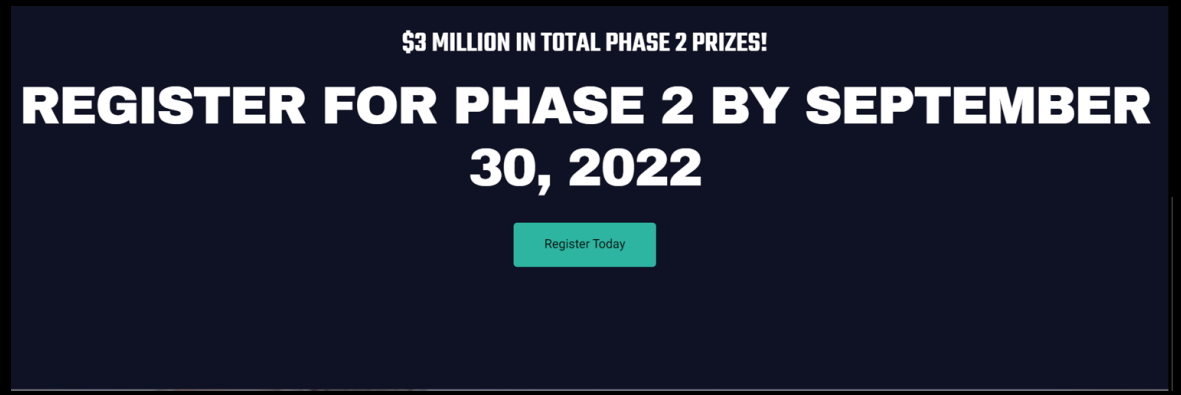
https://bigidea.nianet.org/wp-content/uploads/2023-BIG-Idea-Challenge-Proposal-Guidelines.pdf

Dates and Deadlines

September 30, 2022	Notice of Intent Deadline
October 20, 2022	Q&A Session for interested teams
January 24, 2023	Proposal and Video Deadline
March 2, 2023	Teams are notified of their selection status

Break the Ice Challenge, Phase 2

https://breaktheicechallenge.com/



The specific NASA technology gaps that Phase 2 aims to address include:

- Excavate large quantities of icy regolith
- Delivery of large quantities of acquired resources
- Hardware and equipment that is lightweight and energy efficient
- Hardware and equipment that is reliable and durable

LSIC Fall Meeting

- November 2 and 3. Hybrid Format.
- Hosted by the University of Texas at El Paso (UTEP)
- Technical focus is *Excavation and Construction*:
  - Lunar and terrestrial construction.
  - Lunar proving grounds and testing facilities.
  - Early lunar infrastructure.
  - Posters and lightening talks.
  - Interactive breakout sessions.
  - Tours.
- Registration deadline is October 18.
- Event page: https://lsic.jhuapl.edu/Events/Agenda/index.php?id=350

Today's Talk

Frank Koch : *Turning Waste into Value: Recycling Space Debris to Build Lunar Infrastructure*

- Founder and CEO of Orbit Recycling based in Berlin.
- Offers a sustainable approach to the supply of building materials in space based on recycled space debris.