



# Lunar Surface Innovation

C O N S O R T I U M

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## Extreme Access Focus Group Telecon

January 14, 2021

We'll start around 3:05

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JHU Applied Physics Laboratory

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JOHNS HOPKINS  
APPLIED PHYSICS LABORATORY

# Today's Agenda

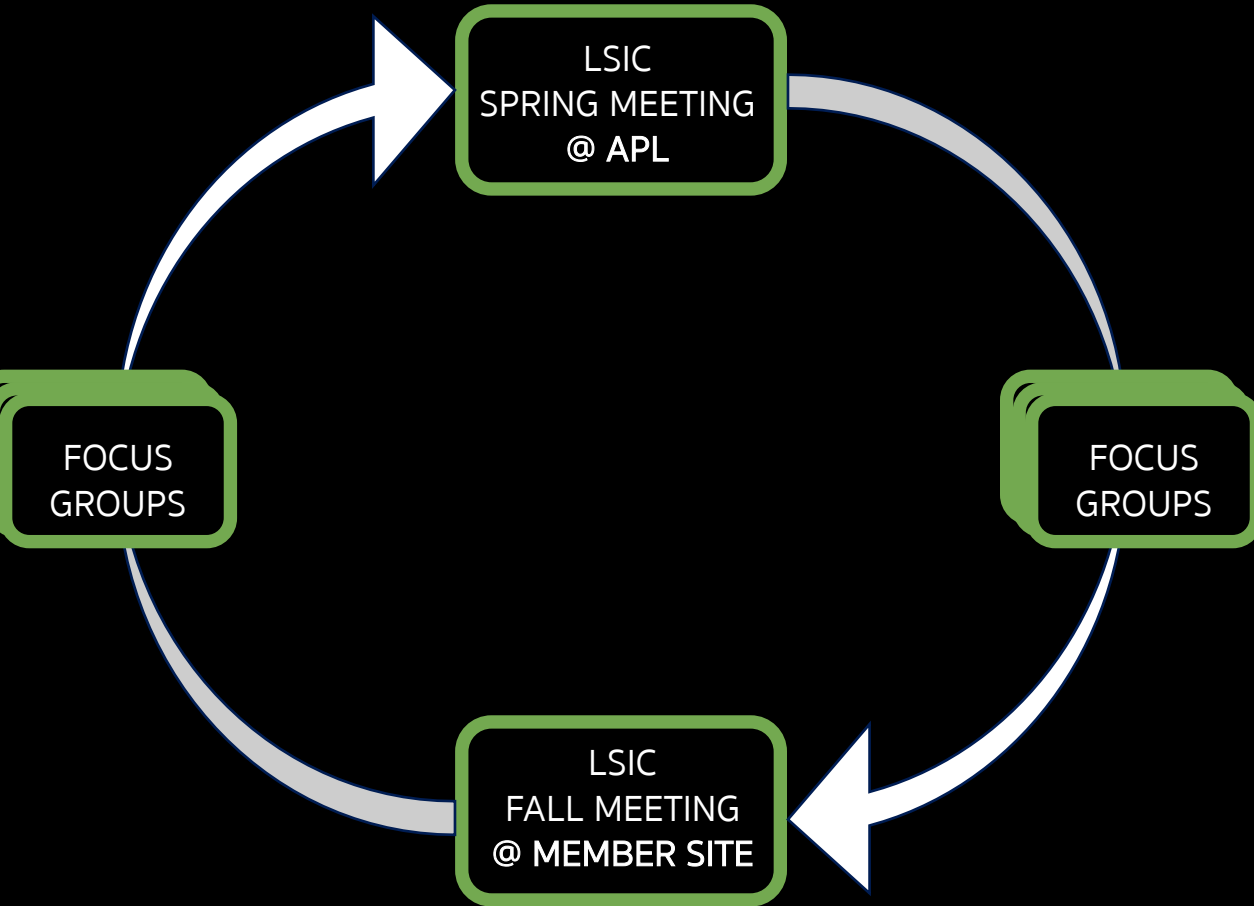
- Introduction of new team members
  - Sarah Withee has joined to LSIC-EA leadership team
- Upcoming Meetings/Opportunities
- Communications
- Technology Spotlight – Dr. Issa Nesnas, JPL
- Open floor and Discussion

- Served on the Design Thinking Team that helped draft APL's lunar strategy
- Electrical engineer with background in robotics, position, navigation, and timing (PNT), and communications
  - Robotics in extreme environments – underwater, underground, and “soft” robots
    - Computer vision for CU Boulder Robosub
    - Radar sensor for SLAM for Team Marble drone participating in the DARPA Subterranean Challenge
    - Soft starfish-inspired robot at University of Maryland College Park
  - PNT
    - Simulation of timing errors in satellite communications systems
  - Comms systems
    - Integration and test of communications systems for Europa Clipper, Dart, University of Colorado Earth Escape Explorer (CU-E3)
- Looking forward to being part of the Extreme Access group!

# Upcoming Meetings

- Focus Group Telecons (2<sup>nd</sup> Thursday each month, 3-4 pm EST)
  - [January 14, 2021](#)
  - February 11, 2021
- Lunar Surface Science Workshop
  - Space Biology, January 20-21, 2021
  - Structuring Real-Time Science Support of Artemis Crewed Operations, February 24-25, 2021
  - Free, but **registration is required**
  - <https://www.hou.usra.edu/meetings/lunarsurface2020/>
- LSIC Dust Mitigation Workshop, February 4, 2021
  - <http://lsic.jhuapl.edu/Events/Agenda/index.php?id=118>
  - Registration now open!
  - Abstracts for lighting talks due January 15, 2021
- Japan-U.S. Aerospace Cooperation Seminar 2021: The Artemis Generation Is Upon Us.
  - January 15, 11 am EST
  - The event will be streamed online on JAXA's YouTube channel.
  - <https://youtu.be/CiY3lQCP7Oc>

# Reminder: LSIC Meeting Cycle



*Each Focus Group is tasked with compiling community inputs on relevant topics*

- Input collected through monthly telecons and off-cycle virtual meetings to identify and discuss critical needs
- Some FGs have conducted ~6-hour topic-specific workshops (e.g. ISRU Supply and Demand, upcoming Dust Mitigation)
- Other possible approaches include “super-sized” focus group meetings
- EA will be holding a short, focused workshop early in March. Stay tuned for more details!

- Confluence is our record of discussions and a good repository
  - Confluence is free to you and available to all registered LSIC members
  - We will be using Confluence to document discussions and provide resources to LSIC members. All focus groups have a separate page so it's a good collaboration space.
  - To request an account, please email Andrea Harman: [ams573@alumni.psu.edu](mailto:ams573@alumni.psu.edu)
- Technology Spotlights/Lightning Talks at monthly telecons
  - Anyone can volunteer to give a lightning talk (10-20 mins)
  - Email Angela or Sarah, or comment on Confluence, to sign up!
- Updates to the webpage - <http://lsic.jhuapl.edu/Focus-Areas/Extreme-Access.php>
  - Notes, slides, recordings from telecons posted here

Follow the Code of Conduct for all Focus Group communications

- Current Funding Opportunities:
  - Lunar Vertical Solar Array Technology (due 12/14)
    - <https://nspires.nasaprs.com/external/solicitations/summary/init.do?sollid={68A7EFE3-1B4F-5AA1-A169-119D97C8DB8F}&path=open>
  - Watts on the Moon Centennial Challenge
    - <https://www.herox.com/WattsOnTheMoon>
    - Phase 1 Registration and Submission Deadline: 25 March 2021
  - Break the Ice Lunar Challenge
    - <https://breaktheicechallenge.com/>
    - Registration and System Architecture Submission Deadline: 18 June 2021

LSIC Spaces People Create ... Search [ ] ? [ ] [ ]

Extreme Access ☆

Pages

Blog

PAGE TREE

- EA Conversations
- EA Monthly Meeting
  - 10 December 2020
  - 12 November 2020
  - 10 September 2020
  - 13 August 2020
  - 09 July 2020
  - 18 June 2020
  - 14 January 2021**
    - Discussion of lunar architectur
    - Discussion of Presentation by

Dashboard / Extreme Access Home / EA Monthly Meeting

## 14 January 2021

Created by Angela Stickle, last modified about 2 hours ago

### Meeting Agenda

- Discussion of lunar architecture/infrastructure
- Discussion of Presentation by Dr Issa Nesnas (JPL)

Please click the links to the pages above to contribute to the discussion.

Like Be the first to like this

Write a comment...

Content posted to LSIC must be approved for public release. Remember to safeguard your intellectual property when sharing information, as this forum is open to all the members of LSIC. Please keep LSIC's code of conduct (available on homepage) in mind when posting.

1. Add a comment to sign in
2. Selecta an agenda topic and comment your thoughts
3. Follow-up after the telecon to continue to discussion!

No labels



# Technology Spotlight

## Dr. Issa Nesnas (JPL)

# Discussion of Lunar Infrastructure

- Please join the discussion on the Confluence page for LSIC Extreme Access  
<https://lsic-wiki.jhuapl.edu/pages/viewpage.action?pageId=6259700>
- We are continuing the discussion about potential future lunar architecture – infrastructure that would enable and facilitate future missions
- Where can we go on the surface that would:
  - Drive innovation?
  - Utilize technology currently being developed?
  - Answer high-priority science goals?
- What infrastructure is required? Why? Does it exist yet?
-



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# Contact information

LSIC Director: Rachel Klima, [SES-LSIC-Director@jhuapl.edu](mailto:SES-LSIC-Director@jhuapl.edu)  
<http://lsic.jhuapl.edu>

Focus Group Area	Listserv address	Facilitator
In-Situ Resource Utilization	<a href="mailto:LSIC_ISRU@listserv.jhuapl.edu">LSIC_ISRU@listserv.jhuapl.edu</a>	Karl Hibbitts
Surface Power	<a href="mailto:LSIC_Power@listserv.jhuapl.edu">LSIC_Power@listserv.jhuapl.edu</a>	Wes Fuhrman
Extreme Environments	<a href="mailto:LSIC_ExtremeEnvironment@listserv.jhuapl.edu">LSIC_ExtremeEnvironment@listserv.jhuapl.edu</a>	Ben Greenhagen
Extreme Access	<a href="mailto:LSIC_ExtremeAccess@listserv.jhuapl.edu">LSIC_ExtremeAccess@listserv.jhuapl.edu</a>	Angela Stickle
Excavation and Construction	<a href="mailto:LSIC_ExcavationConstruction@listserv.jhuapl.edu">LSIC_ExcavationConstruction@listserv.jhuapl.edu</a>	Athonu Chatterjee
Dust Mitigation	<a href="mailto:LSIC_DustMitigation@listserv.jhuapl.edu">LSIC_DustMitigation@listserv.jhuapl.edu</a>	Jorge Núñez

# 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