

# Welcome to LSIC!

Thank you for becoming a member of the Lunar Surface Innovation Consortium (LSIC)! We're excited to have you on board, and to begin working with you. Please use this document as a starting point to orient yourself to our organization, and how you can be a meaningful contributor to this important effort.

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## WHO WE ARE & HOW WE GOT HERE

The Lunar Surface Innovation Consortium (LSIC) is a nationwide alliance of government agencies, industry, nonprofit organizations, and academia with a vested interest in our nation’s campaign to establish a sustained presence on the Moon. The LSIC is designed to harness the creativity, energy, and resources of the nation to help NASA keep the United States at the forefront of lunar exploration. LSIC membership will be at the organizational level and each member organization is required to name one representative who will manage the organization’s relationship with the Consortium. This does not limit the number of people from one organization that can participate in Consortium activities.

The [NASA Space Technology Mission Directorate \(STMD\) Lunar Surface Innovation Initiative \(LSII\)](#) is the impetus behind the LSIC, and LSIC is being formulated to directly address LSII’s goals. LSII is shepherding and supporting the maturation of the technologies that will enable sustainable operations on the surface of the Moon by developing and performing demonstrations that will allow primary technology hurdles to be retired for a given capability at a relevant scale. [LSII seeks to accelerate technology readiness in key lunar infrastructure capabilities through a combination of NASA in-house activities, competitive programs, and public-private partnerships.](#) LSII has identified six categories of foundational technologies to focus on: In Situ Resource Utilization, Surface Power, Extreme Access, Surface Excavation and Construction, Lunar Dust Mitigation, and Extreme Environments. The LSIC focus groups are established to delve into these key areas, providing a pathway between NASA and external institutions through which key capabilities and needs can be communicated and developed.



An overview of LSIC’S mission, focus groups, and upcoming events will be maintained on the website <http://lsic.jhuapl.edu/>, and are summarized below for your quick reference. We encourage you to share the website with your colleagues, collaborators, family, and friends – as LSIC grows and produces output, we will be communicating with the world about our progress, and the website provides a front-row seat to that broadcast.

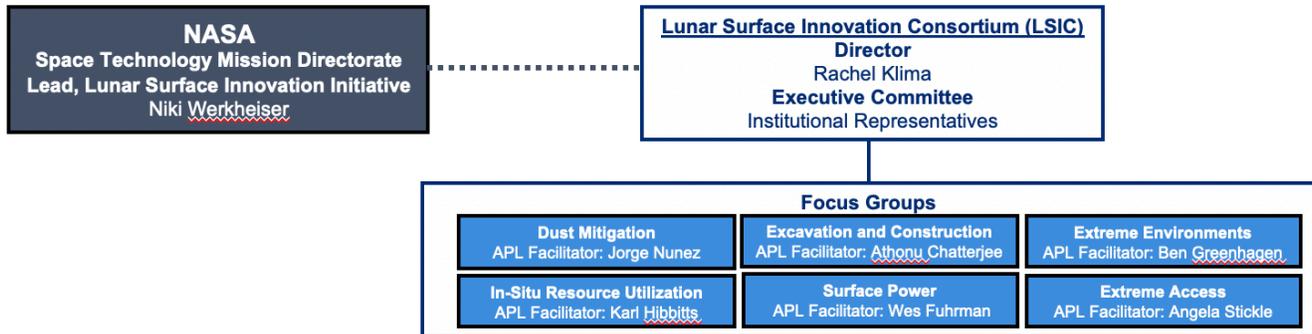
**OUR MISSION:** To identify technology needs, assess readiness of systems, and make recommendations for lunar surface exploration.

**OUR FOCUS:** There will be six key focus areas to enable our return to the Moon and sustainable operations on the lunar surface.

**OUR CHARTER:** To build pathways for collaboration, communication, education, and research between academia, industry, non-profits and Government.

Development of an LSIC Charter will be led by the Executive Committee within our first year. However, we ask that participants review and agree to abide by the spirit of our **Code of Conduct**. Any revisions to the Code of Conduct will be circulated to the LSIC membership and posted on the LSIC website (<http://lsic.jhuapl.edu>).

## LSIC LEADERSHIP



The goal of LSIC is to facilitate communication regarding lunar surface technology. LSIC provides a forum for NASA to communicate technological requirements, needs and opportunities to the community, and for the community to share existing capabilities and identify critical gaps in need of investment with NASA. The Johns Hopkins Applied Physics Laboratory (APL) provides a Director for the consortium to ensure a single point of contact for implementing tasks and reporting progress. An Executive Committee, drawn from the community and with diverse representation from the various types of members (large and small companies, non-profits, universities, NASA, etc.) will coordinate with the Director to oversee LSIC, develop the charter, and continuously monitor whether strategies need to be adjusted. The Executive Committee is also responsible for approving official membership by institutions. APL provides a facilitator for each focus group from the technical staff. Each facilitator will ensure that collaboration tools are serving the groups, resources are centralized on the team sites, and that meetings are regularly held. They will also be responsible for establishing regular communication among focus group participants and reporting outcomes of the focus group to NASA.

## WHAT YOU CAN CONTRIBUTE

LSIC is here to serve as your voice to NASA. Membership is at the organizational level, but any number of participants from each organization are welcome. As such, participants may contribute as much or as little as they are able to, from simply attending meetings or receiving high-level email notices through being active participants in the focus group work. At all levels, we ask that all participants interact in a respectful matter with the common goal of helping NASA STMD to invest wisely in critical technology to establish a sustainable lunar presence. Member institutions may elect to be featured in monthly newsletters, virtual meetings, or semi-annual in-person meetings. In addition, once a year, a member institution will host the Fall semi-annual meeting.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	Semiannual Meeting: APL						Semiannual Meeting: Partner				
			Summer Focus Group Meetings						Winter Focus Group Meetings		
Ongoing: Focus Group Telecons and Technology Gap Assessments											

### Focus Groups

As an active member of a focus group, you will be expected to contribute to regular meetings and to, when possible, assist in study activities to assess the readiness level of key technologies. Leaders for study groups will be drawn from the community, with the facilitator providing support for coordinating writing summary white papers or collecting and centralizing existing resources. Focus groups will meet monthly via telecon, virtually in multiple ~half day Focus Group meetings, and in-person at semi-annual LSIC meetings.

### Mentorship

Mentorship is a key aspect of LSIC. LSIC leadership and NASA STMD strongly support mentorship, including mentoring of emerging space companies by more established members of the community. We encourage member institutions to share internship or job opportunities with the community, and we urge all participants to provide a supportive environment for younger members of the community. As LSIC matures, the Executive Council will develop a strategy to explicitly facilitate mentoring.

### LSIC Culture

Every member of the LSIC team is expected to work smart, be considerate of their teammates, and contribute to a collaborative, positive, and healthy environment in which we can all succeed. LSIC is dedicated to creating an inclusive environment for everyone regardless of race, ethnicity, religion, color, national origin, age, disability (physical or mental), sexual orientation, gender identity, parental status, marital status, career status, or political affiliation as well as gender expression, mental illness, socioeconomic status or background, neuro(a)typicality, or physical appearance. Interactions of LSIC members with students and postdoctoral researchers are particularly important – indeed, advancing the development of junior members in a supportive environment is an important objective. We’re united by LSIC’s charter, and we celebrate our unique differences.

## BENEFITS TO PARTICIPANTS AND MEMBERS

Contributing members of LSIC stand to gain a great deal from their collective efforts. Each constituency can expect specific benefits that will encourage them to participate meaningfully, giving LSIC the support it needs to continue moving towards sustainable operations on the surface of the Moon.

### Value to Industry

- Access to contextual information for lunar surface
- Early identification and collaboration with emerging technologies from academia
- Influence into setting standards together with the greater industrial community
- Opportunity to identify technology gaps and suggest technical priorities for NASA
- Mentoring by established companies
- Recruiting of new talent
- Frequent communications with sponsor

### Value to Academia

- Insight gained into gaps where R&D is needed
- Job / internship placement opportunities for students
- Partnerships with industry for maturation and implementation of new technology
- Communication with the sponsor
- Means to build reputation for their programs
- Insight into upcoming university-targeted funding opportunities

### Value to Government

- Finger on the pulse of the community
- Visibility into technology development
- Opportunity to suggest early course corrections
- Conversations with the community as they set standards and interfaces
- A readily available resource for rapidly addressing emerging needs
- Effective venue to communicate their needs to the providers

### Value to Non-Profits

- Opportunity to share their mission with industry, academia, and government
- Partnerships between their subject matter experts and others in the community
- Understanding of national priorities

## LSIC COLLABORATION TOOLS & HOW TO PARTICIPATE

### Listserv (L-Soft)

**PURPOSE:** Email-based internal communication between members of a focus area and any related sub-groups. A Listserv is a method of communicating with a group of people via email. You send one email message to the “reflector” email address, and the software sends the email to all of the group's subscribers.

**Focus Group Listservs:** Use these to participate in conversations with your focus group and to communicate information that everyone should be aware of. These lists may be posted to by any focus group members.

Focus Group Area	Listserv address	Facilitator
In-Situ Resource Utilization	LSIC_ISRU@listserv.jhuapl.edu	Karl Hibbitts
Surface Power	LSIC_Power@listserv.jhuapl.edu	Wes Fuhrman
Extreme Environments	LSIC_ExtremeEnvironment@listserv.jhuapl.edu	Ben Greenhagen
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 Nunez

**Announcement Listserv:** This will be used to provide key announcements that are relevant to the full LSIC community, and cannot accept replies.

[LSIC\\_Announce@listserv.jhuapl.edu](mailto:LSIC_Announce@listserv.jhuapl.edu)

#### *To subscribe to a listserv:*

If you have already signed up for LSIC via the website, you can request to join another listserv by emailing Andrea Harman at [ams573@alumni.psu.edu](mailto:ams573@alumni.psu.edu).

#### *To unsubscribe from a listserv:*

If you would like to unsubscribe from any of the LSIC listservs, you can do so by email by sending a blank email to [listname-unsubscribe-request@listserv.jhuapl.edu](mailto:listname-unsubscribe-request@listserv.jhuapl.edu),

### Website

**PURPOSE:** Broadcast of LSIC news, developments, and findings to the public at large.

Currently accessible at <http://lsic.jhuapl.edu/>. Only finished content approved for public consumption should be published here. Focus Group white papers and resources will be posted by facilitators as needed. Additions to the schedule or other full-group content can be suggested via form feedback on the website.

**Use this to share information about LSIC with external stakeholders and other interested parties.**

## Wiki

**PURPOSE:** Allow all LSIC members to get at-a-glance updates on the progress and status of individual focus groups and related sub-groups.

The wiki is a collaboration space where shared files can be easily accessed by all team members, and presentations / documentation can be stored for team reference. More static than the email listservs but less fixed than the website, Focus Group facilitators will ensure that this is kept up-to-date.

**Use this to stay up-to-date with LSIC overall and its focus areas, both in terms of their future plans, past decision-making and formal output.**

## HOW TO CONTACT LSIC

For general inquiries or to request information on LSIC send an e-mail to Andrea Harman at [ams573@alumni.psu.edu](mailto:ams573@alumni.psu.edu). For questions or issues concerning the website, contact [SES-LSIC-Web@jhuapl.edu](mailto:SES-LSIC-Web@jhuapl.edu).

### Contact information for specific inquiries

LSIC Director	Rachel Klima	Rachel.Klima@jhuapl.edu
ISRU Facilitator	Karl Hibbitts	Karl.Hibbitts@jhuapl.edu
Surface Power Facilitator	Wes Fuhrman	Wesley.Fuhrman@jhuapl.edu
Extreme Environments Facilitator	Ben Greenhagen	Benjamin.Greenhagen@jhuapl.edu
Extreme Access Facilitator	Angela Stickle	Angela.Stickle@jhuapl.edu
Excavation and Construction	Athonu Chatterjee	Athonu.Chatterjee@jhuapl.edu
Dust Mitigation	Jorge Nunez	Jorge.Nunez@jhuapl.edu

## EVENTS & DEADLINES

### Past Events

[LSIC Kickoff Meeting, Feb 28, 2020.](#)

### Upcoming Events

Annual Executive Committee Meeting

LSIC Fall Meeting – (virtual for 2020, Early September)

Virtual Focus Group Workshops:

- Surface Power (Target Early-Mid June)

- In Situ Resource Utilization (Target Mid June)

- Extreme Access

- Extreme Environments

- Excavation and Construction

- Dust Mitigation

### Deadlines

(nothing yet)

## FAQs

To be developed on an ongoing basis – should be housed in wiki.