

**PREPARING VIRTUALLY FOR VIRTUAL PROGRAMS.** C. Shupla<sup>1</sup>, A. Shaner<sup>1</sup>, S. Webb<sup>1</sup>, <sup>1</sup>Lunar and Planetary Institute (3600 Bay Area Blvd., Houston, TX 77058, [shupla@lpi.usra.edu](mailto:shupla@lpi.usra.edu))

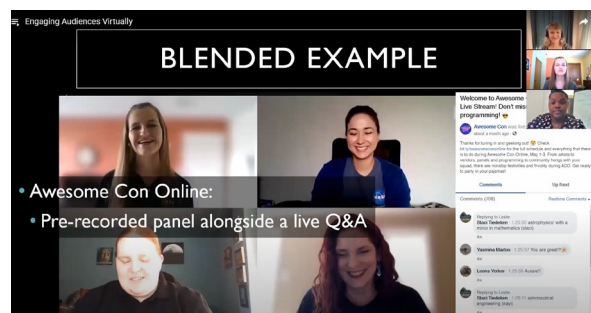
**Introduction:** In 2020, many programs pivoted to engage audiences virtually. Presenting content virtually is challenging, and it is even more difficult to prepare those audiences, partners, and presenters virtually to conduct these programs. This poster will highlight some of the programs conducted by the Lunar and Planetary Institute (LPI) and the lessons learned.

**Examples of Virtual Programs:** LPI has streamed its public lecture series, the *Cosmic Exploration Speaker Series*, for many years [1]. In 2020, the programs were primarily conducted online. The format is the traditional presentation followed by a question-and-answer session.

In April 2020, LPI began a new format for children and families, in *Virtual Exploration Experiences with Planetary Scientists (VEEPS)* programs [2]. These are shorter (about 30 minute) online events that include a short presentation and a demonstration or activity conducted with participants, as well as discussion time. This model was also used in August-October 2020 for the *Virtual Programs with NASA Scientists* that LPI conducted on behalf of the NASA@ My Library project, which is part of the NASA Science Activation portfolio [3].

Upcoming programs for children may incorporate a modified version of the VEEPS program, with an interview-style discussion with planetary scientists replacing the short presentations.

In recent years, LPI's *Sharing Planetary Science* seminars [4] have included a virtual option for planetary scientists who want to join online. These seminars include a mixed-format of short presentations, discussions, and group activities. In 2020, most of these were conducted strictly online; some still included activities but the discussions were whole-group rather than in pairs or small-group.

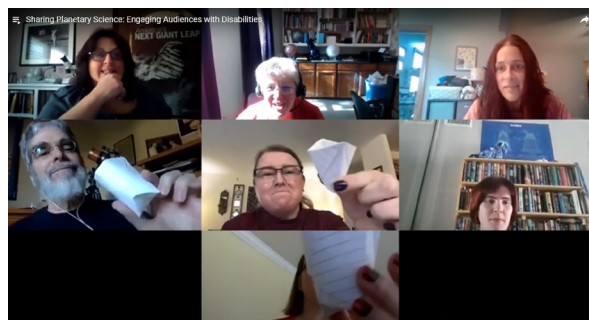


*The June 2020 Sharing Planetary Science seminar for June 2020 focused on techniques to engage audiences virtually.*

### Top Recommendations for Planetary Scientists:

These recommendations are based on the above experiences, and are intended for engaging public audiences, rather than for professional seminars or conferences:

- Have a partner or colleague help during the event.
- Get information about the audience in advance.
- Create a friendly and informal atmosphere.
- Invite the audience to participate frequently and in multiple ways.



*This Sharing Planetary Science seminar invited attendees to try to create an origami cup as an activity.*

**Get Help!** Have a partner or colleague help to host the event, rather than trying to host the virtual program and give the presentation alone. Ideally, a virtual program has at least two people in addition to the scientist(s) presenting. These colleagues can respond to participants' requests for help or feedback during the program, introduce the speaker, display powerpoints to free up the speaker's screen (making it easier for the speaker to see participants' videos), relay questions to the speaker, and more. Speakers can be distracted by attempting to read the "chat" while talking, and may be unaware of technical problems if there are no colleagues to help address the issues during the virtual event. In the event of internet failure, colleagues can display the speaker's slides while the speaker calls in by phone.

This help should also include practicing in advance of the program. This can include practice using the platform and ensuring that all presenters and hosts can use their cameras and microphones, and clarifying roles, such who will welcome the participants as they arrive, what questions to ask the audience during the program, planning the use of polls or other interactive tools, and discussing the agenda of the event..

**Get Information about the Audience:** Ask for input about the potential audience before the program. Find out details about the audience's age, expectations, and understanding of the topic in advance. For instance, if the participants are Girl Scouts earning a badge, learn

more about the badge's content and what the girls should already know. If participants are families with children, ask the event's organizers whether the children are likely to know the names of the planets, and other details related to your topic.

**Create a friendly and informal atmosphere.** It can be much more difficult to get and keep the audience's attention in a virtual presentation; they may be distracted or disengaged, particularly if they feel that the scientist is "distant" and unapproachable. Attendees are more likely to respond if the invitation to do so is casual. Keeping the virtual environment friendly and informal can reduce participants' anxiety and increase their interest in participating.

One way to create this interest and connect with audiences is by making the presentation personal. Scientists can share how they became interested in the topic, why they are excited by the research or mission, and even their hobbies and interests. For instance, scientists can describe their experiences that first drew them into science, or even talk about their favorite foods and invite children to share which foods are their favorites right before the program begins.

Another way to keep the atmosphere informal is to ask open-ended questions. For instance, inviting participants to share their favorite planet or whether they've seen a shooting star may garner more responses than asking them to share how far away Mars is or what the composition of Venus' atmosphere is.



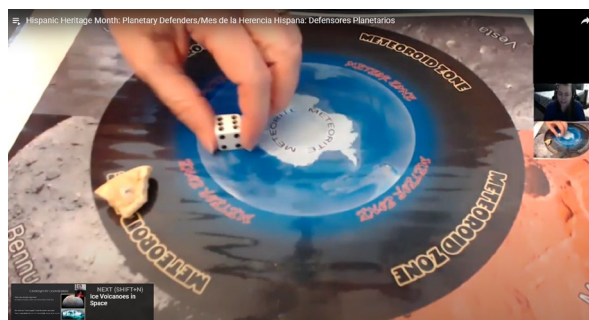
*Maintaining a friendly atmosphere increases participant engagement.*

**Invite the audience to participate frequently and in multiple ways.** Consider inviting the audience to share their own knowledge, experiences, and reactions throughout the program. Depending on the size of the audience and the platform for the program, this can be done through a virtual "chat," through polls, thumbs up/down options, or even turning on participants' microphones and cameras. If the audience has no ability to provide input or feedback during the program, it may be better to simply produce and disseminate a video presentation.

To be successful, the audience needs to be invited to respond from the beginning of the program. If too much time has passed before they are given the opportunity to react, they are less likely to actively participate at all.

Include informal discussion before the program begins, inviting early arrivals to participate.

While a program can rely on inviting the audience to add comments and questions in the chat box throughout, it may be more engaging if a variety of strategies are used to increase audience participation: polls, live discussion, responses in the chat, and even adding a game, demonstration, or activity. There are a variety of planetary education activities that can be conducted virtually. LPI has used a powerpoint version of its Mars Matches activity with audiences, as well as the Space Rocks board game, a dry ice comet demonstration, the Searching for Life experiment, a model of pancake domes, a hot chocolate model of volcanism, and more.



*The Space Rocks game, with powerpoint questions, can be played in a virtual program with children or adults.*

**References:** [1] Shaner A. et al (2016) 47<sup>th</sup> LPSC Abstract #2017. [2] Webb S. and Shupla C. (2020) AGU Abstract #752894. [3] Holland A. et al (2020) 51 LPSC Abstract #2614. [4] Shupla C. et al (2019) 50<sup>th</sup> LPSC Abstract #1847.

**Additional Information:** For more information, please contact Christine Shupla ([shupla@lpi.usra.edu](mailto:shupla@lpi.usra.edu)), and review the recorded Sharing Planetary Science seminar: [Engaging Audiences Virtually](#). Select video recordings of the VEEPS programs are available [online](#).