

*The National Academies of*  
SCIENCES • ENGINEERING • MEDICINE

DIVISION ON ENGINEERING AND PHYSICAL SCIENCES  
SPACE STUDIES BOARD

**Committee on Astrobiology and Planetary Sciences**

**2021 Fall Meeting**

**November 10-12, 2021**

Virtual Meeting

ALL TIMES IN US EASTERN STANDARD TIME (UTC-4:00)

This agenda is a draft, subject to change, and was last updated on 11/8/2021 4:45 PM

**AGENDA**

**WEDNESDAY, NOVEMBER 10, 2021**

**OPEN SESSION**

*Open to Public Viewing*

**Livestream Link:** <https://livestream.com/accounts/7036396/events/9922658>

**Updates from NASA HQ and Planetary Science Division Missions**

- |                |   |   |
|----------------|---|---|
| <b>1:30 PM</b> | <b>Welcome and Introductions</b>  | <i>Dr. Martha Gilmore, CAPS Co-Chair /<br/>Dr. Christopher House, CAPS Co-Chair</i>                 |
| <b>1:35 PM</b> | <b>Update from NASA Planetary Science Division*</b><br>(35 minute presentation & 20 minute discussion period) | <i>Dr. Lori Glaze, Director, Planetary Science<br/>Division, NASA-HQ</i>                            |
| <b>2:30 PM</b> | <b>Status Update on <i>Psyche</i> Mission*</b><br>(25 minute presentation & 10 minute discussion period)      | <i>Dr. Lindy Elkins-Tanton, Principle Investigator,<br/><i>Psyche</i> Mission, Arizona State U.</i> |
| <b>3:05 PM</b> | <i>Break</i><br>(35 minute break period)  |   |
| <b>3:40 PM</b> | <b>Status Update on <i>VIPER</i> Mission*</b><br>(25 minute presentation & 10 minute discussion period)       | <i>Dr. Anthony Colaprete, Project Scientist,<br/><i>VIPER</i> Mission, NASA-Ames</i>                |

**NASA White Paper on Standards of Evidence for Life Detection**

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|----------------|--|---|
| <b>4:15 PM</b> | <b>Background and Summary of Standards of Evidence<br/>Workshop by Workshop Leaders*</b><br>(45 minute presentation & 20 minute discussion period) | <i>Dr. Vikki Meadows, Professor, Dept. of<br/>Astronomy, U. of Washington /<br/>Dr. Heather Graham, Research Scientist, NASA-GSFC</i> |
|----------------|--|---|

\* Placeholder Title – To Be Updated by Speaker

5:20 PM Meeting Adjourns to Closed Session

**THURSDAY, NOVEMBER 11, 2021**

**OPEN SESSION**

Open to Public Viewing

Livestream Link: <https://livestream.com/accounts/7036396/events/9922658>

**NASA White Paper on Standards of Evidence for Life Detection (continued)**

1:00 PM	<b>Welcome and Introductions</b>	<i>Dr. Martha Gilmore, CAPS Co-Chair / Dr. Christopher House, CAPS Co-Chair</i>
1:05 PM	<b>Biosignatures Strategies and Standards of Life Detection*</b> (25 minute presentation & 10 minute discussion period)	<i>Dr. Sara Walker, Assoc. Professor, School of Earth and Space Exploration, Arizona State</i>
1:40 PM	<b>The Role of Abiotic Chemistry in Life Detection</b> (25 minute presentation & 10 minute discussion period)	<i>Dr. Andrew Steele, Senior Staff Scientist, Carnegie Institute</i>
2:15 PM	<i>Break</i> (60 minute break period)	
3:15 PM	<b>Microbiology for Mars Missions and Standards of Life Detection*</b> (25 minute presentation & 10 minute discussion period)	<i>Dr. Linda Jahnke, Principle Investigator, Exobiology Program, NASA-Ames</i>
3:50 PM	<b>Biosignature Detection and the Search for Life on Mars*</b> (40 minute presentation & 20 minute discussion period)	<i>Dr. Jennifer Eigenbrode, Astrobiologist, NASA-GSFC</i>
4:50 PM	<i>Meeting Adjourns to Closed Session</i>	

**FRIDAY, NOVEMBER 12, 2021**

**OPEN SESSION**

*Open to Public Viewing*

**Livestream Link:** <https://livestream.com/accounts/7036396/events/9922658>

**NASA White Paper on Standards of Evidence for Life Detection (continued)**

<b>9:00 AM</b>	<b>Welcome and Introductions</b>	<i>Dr. Martha Gilmore, CAPS Co-Chair / Dr. Christopher House, CAPS Co-Chair</i>
<b>9:05 AM</b>	<b>Ancient Organic Material and Improving Detection Confidence*</b> (25 minute presentation & 10 minute discussion period)	<i>Dr. Yuichiro Ueno, Professor, Geology &amp; Geochemistry, Tokyo Tech</i>
<b>9:40 AM</b>	<b>Exoplanet Atmospheres and Standards of Life Detection*</b> (25 minute presentation & 10 minute discussion period)	<i>Dr. Shawn Domagal-Goldman, Supervisory Research Scientist, Planetary Environments Lab, NASA</i>
<b>10:15 AM</b>	<b>SETI and Standards for Technosignature Detection*</b> (25 minute presentation & 10 minute discussion period)	<i>Dr. Jill Tarter, Chair Emeritus, SETI</i>
<i>10:50 AM</i>	<i>Meeting Adjourns to Closed Session</i>	



**The following information is provided for any members of the general public who may be in attendance:**

This meeting is being held to gather information to help the committee in its charge. This committee will examine the information and material obtained during this, and other public meetings, in an effort to inform its work. Although opinions may be stated and lively discussion may ensue, no conclusions are being drawn nor will recommendations be made. Observers who draw conclusions about the committee's work based on this meeting's discussions will be doing so prematurely.

Furthermore, individual committee members often engage in discussion and questioning for the specific purpose of probing an issue and sharpening an argument. The comments of any given committee member may not necessarily reflect the position he or she may actually hold on the subject under discussion, to say nothing of that person's future position as it may evolve in the course of the project. Any inference about an individual's position are therefore also premature.

**NOTES FOR PRESENTERS**

Your presentation may not include unpublished data, ITAR controlled and/or other sensitive information.

At some point a staff member will be asking you to sign a consent form allowing us to use your presentation, specifically to post it on our website.

## STATEMENT OF TASK

### Task Initiated on 25 August 2021

The National Academies of Sciences, Engineering, and Medicine's Committee on Astrobiology and Planetary Sciences will convene to conduct an independent review of the White Paper on Standards of Evidence for Life Detection and issue a short report addressing the following questions:

- Does the white paper include a clear and transparent description of the process?
- Does the report accurately reflect the scientific literature? Are there any crucial content areas detrimentally underrepresented in the report?
- Are the assumptions valid and reasonable?
- Are the conclusions valid and supported?
- Are there potential limitations or data gaps that would substantially impact the conclusions?

## TENTATIVE SCHEDULE FOR REPORT COMPLETION (AT PROJECT INITIATION)

Late October 2021	Task Initiation and Kick Off Meetings
November 2021 – March 2022	Committee Meetings to Discuss Task, Gather Information and Input from Experts; Discuss, Deliberate, and Draft Report
2 April 2022	Target Draft Report Completion Date; Sent Draft Report to Reviewers
16 April 2022	Reviews Due from Reviewers
24 May 2022	Target Date for Response to Review Submission to DEPS Report Review Officer
8 June 2022	Target Sign-Off Date
15 June 2022	Approved Report to DEPS Editor
Late June 2022	Deliver Report to NASA in Prepublication Format