

# SPACE SCIENCE WEEK

The National  
Academies of

SCIENCES  
ENGINEERING  
MEDICINE



## SPACE STUDIES BOARD

Spring 2022 Meeting of the Discipline Committees of the Space Studies Board

March 21-22, 2021

**Virtual Meeting**

**Plenary Session**

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

## AGENDA

This agenda is a draft, subject to change, and was last updated on 3/9/2022 2:37 PM

### MONDAY, MARCH 21, 2022

#### Space Science Week Plenary Session, Day 1

#### Opening Session: Introductions and NASA, NSF, and NOAA Science Program Update

Livestream Link: <https://livestream.com/accounts/7036396/events/10214978>

<b>1:30 PM</b>	<b>Welcome</b>	<b>Dr. Margy Kivelson</b> <b>SSB Chair</b>
<b>1:35 PM</b>	<b>Address by NASA Deputy Administrator</b> (30-minute address)	<b>Ms. Pamela Melroy</b> <b>NASA Deputy Administrator</b>
<b>2:05 PM</b>	<b>NASA Science Mission Directorate (SMD) Overview</b> (60-minute presentation and 15-minute discussion)	<b>Dr. Thomas Zurbuchen</b> <b>Associate Administrator, NASA-SMD</b>
<b>3:20 PM</b>	<b>Break</b> (55-minute break)	
<b>4:15 PM</b>	<b>Panel 1: NASA SMD Science Endeavors</b> (7-minute presentation each and 25-minute discussion)	
	<b>Moderator:</b>	<b>Dr. Margy Kivelson, SSB Chair</b>
	<b>Panelists:</b>	<b>Dr. Thomas Zurbuchen, Associate Administrator, NASA-SMD</b> <b>Dr. Karen St. Germain, Director, Earth Science Division, NASA-SMD</b> <b>Dr. Nicola Fox, Director, Heliophysics Division, NASA-SMD</b>

**Dr. Lori Glaze, Director, Planetary Science Division, NASA-SMD**  
**Dr. Paul Hertz, Director, Astrophysics Division, NASA-SMD**  
**Dr. Craig Kundrot, Director, Biological and Physical Sciences Division, NASA-SMD**

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

**5:15 PM**      **National Science Foundation (NSF) Science  
Program Update**  
(25-minute presentation)

**Dr. Debra Fischer, Director, Division of  
Astronomical Sciences, NSF**

**5:40 PM**      **National Oceanic and Atmospheric Administration (NOAA)  
National Environmental Satellite, Data, and Information  
Service (NESDIS) Program Update**  
(25-minute presentation)

**Dr. Steve Volz, Assistant  
Administrator, NOAA-NESDIS**

**6:05 PM**      *Plenary Session Adjourns for the Day*

---

**Keynote Talk Session**

---

Livestream Link: <https://livestream.com/accounts/7036396/events/10214978>

**7:00 PM**      **Opening Space Science Week Keynote Talk**  
**“The State of U.S. Science and Engineering 2022”**  
**Dr. Julia Phillips**                      **National Science Board**

**Keynote Abstract**

Hear from Dr. Julia Phillips about a report from the National Science Board sent to the President and Congress. Hear about the global position of the U.S. science and engineering enterprise and how it has shifted due to rapid growth in Asia’s research investments and science and technology capabilities. The data shows that strengthening the U.S. science and engineering enterprise is critical to maintaining the U.S. position as a lead performer and collaborator of science and technology activities globally.

**Keynote Speaker Bio**

Julia M. Phillips is Director Emeritus and Retired Vice President and Chief Technology Officer, Sandia National Laboratories. Previous positions include Deputy Chief Technology Officer and Director, Laboratory Research & Strategy Partnerships and Director, Nuclear Weapons Science and Technology at Sandia. Her research has been in the areas of epitaxial metallic and insulating films on semiconductors, high-temperature superconducting, ferroelectric, and magnetic oxide thin films, and novel transparent conducting materials. Dr. Phillips currently serves as Home Secretary for the National Academy of Engineering and is past chair of the APS Division of Condensed Matter Physics and served as president of the Materials Research Society. She served as a member of the Working Group for the 2014 NNI (National Nanotechnology Initiative) Review under the President’s Council of Advisors on Science & Technology (PCAST). Dr. Phillips holds a Ph.D. in applied physics from Yale University and a B.S. in physics from the College of William and Mary.

---

**TUESDAY, MARCH 22, 2022**

---

---

**Space Science Week Plenary Session, Day 2**

---

---

**OPEN SESSION**

---

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

**11:30 AM**      **Welcome**      **Dr. Margy Kivelson**      **SSB Chair**

---

**Updates from National Space Agencies and Research Institutions from Around the World**

---

**11:35 AM**      **European Space Agency (ESA) Program Science Highlights**      **Dr. Günther Hasinger**  
(10-minute presentation and 5-minutes discussion)      **Director of Science, ESA**

**11:50 AM**      **Japanese Aerospace Exploration Agency (JAXA) Science Highlights**      **Dr. Masaki Fujimoto**  
(10-minute presentation and 5-minutes discussion)      **Deputy Director General, JAXA**

**12:05 PM**      **Break**  
(15-minute break)

**12:20 PM**      **Chinese National Space Science Center (NSSC) Science Highlights**      **Dr. Chi Wang, Director-General, NSSC**  
(10-minute presentation and 5-minutes discussion)      **Chinese Academy of Sciences**

**12:35 PM**      **Panel 2: New Investigations in Space Science**  
(6-minute presentation each and 16-minutes discussion)

**Moderator:**      **Dr. Colleen Hartman, SSB Director**

**Panelists:**      **Dr. Dipankar Banerjee, Indian Institute of Astrophysics [Aditya-L1]**  
                         **Dr. Eli Waxman, Leader, ULTRASAT, Weizmann Institute of Science, Israel [ULTRASAT]**  
                         **Dr. Chae Kyung Sim, Senior Researcher, Division of Space, Science, Korea**  
                         **Astronomy and Space Science Institute [KPLO]**  
                         **Dr. Adenilson da Silva, Chief, Division of Space Systems, National Institute for Space**  
                         **Research, Brazil (INPE) [Amazônia-1]**

**1:15 PM**      **Break**  
(55-minute break)

**2:10 PM**      **Reflections of the COSPAR President**      **Dr. Len Fisk, President**  
(20-minute presentation and 15-minute discussion)      **Committee on Space Research (COSPAR)**

**2:45 PM**      **Panel 3: Space Situational Awareness, Orbital Debris Mitigation, and Hazards in the Commons**  
(5-minute presentation each and 25-minute discussion)

**Moderator:**      **Dr. Colleen Hartman, SSB Director**

**Panelists:**      **Dr. J.-C. Liou, Chief Scientist for Orbital Debris, NASA**  
                         **Dr. Riccardo Bevilacqua, Professor, Aerospace Engineering, Embry-Riddle**  
                         **Aeronautical University**  
                         **Dr. John Crassidis, Samuel P. Capen Chair Professor, Department of**  
                         **Mechanical and Aerospace Engineering, University at Buffalo**

**Dr. Holger Krag, Head, Space Debris Office, European Space Agency**

3:30 PM Break

(60-minute break)

4:30 PM **Space Debris Removal**  
(20-minute presentation and 10-minutes discussion)

**Dr. Gregory Miller, Professor, Military and Security Studies**  
**Air Command and Staff College**

5:00 PM **NASA Human Space Operations Presentation**  
(20-minute presentation and 10-minutes discussion)

**Ms. Kathy Lueders, Associate Administrator**  
**Space Operations Mission Directorate, NASA**

5:45 PM **Closing Remarks**

**Dr. Margy Kivelson**  
**SSB Chair**

5:50 PM *Plenary Session Adjourns*

**Public Lecture Session**

Livestream Link: <https://livestream.com/accounts/7036396/events/10214997>

6:30 PM **Keynote Space Science Week Public Lecture**

**The *Curiosity* to Explore and the *Perseverance* to Rove: A Decade of Discoveries on Mars**

**Dr. Amy Williams**

**Assistant Professor, Department of Geological**

**Sciences, University of Florida**

**Public Lecture Abstract**

The exploration of Mars has taken us from 'Follow the Water' with the Spirit and Opportunity rovers, to 'Follow the Carbon' with the Curiosity rover. We now accept the challenge to 'Follow the Life' with the grand search for ancient life on Mars through the Perseverance rover mission and the Mars Sample Return program. This lecture will explore the foundational discoveries and ongoing exploration of Mars with NASA's Curiosity and Perseverance rovers.

**Speaker Bio**

Dr. Amy Williams is an astrobiologist and assistant professor of Earth and Planetary Sciences at the University of Florida. Her research focuses on the interaction between microbial life, the geochemical environment, and the rock record on Earth, and how to recognize habitable environments and potentially preserved microbial life on Mars. She has been a member of the NASA Mars Curiosity rover mission since 2009 and has recently joined the cohort of MSL Participating Scientists. She works with the SAM instrument as a lead for SAM's TMAH wet chemistry experiment, designed to detect specific recalcitrant organic molecules in Mars' sediments. She is also a Participating Scientist with the NASA Mars Perseverance rover science team, where she is a Long Term Planner for the mission. She has previously been a NASA Earth and Space Science Fellow, a NASA postdoctoral research associate, and a member of the 2023-2032 Planetary Science and Astrobiology Decadal Survey. She received nominations for the 2017 Maryland Academy of Sciences Outstanding Young Scientist Award, the 2021 UF College of Liberal Arts and Sciences Faculty Mentor of the Year Award, and the 2022 UF Excellence Award for Assistant Professors. She received a University of Florida Research Promotion Initiative Award in 2021.

**Wednesday, March 23, 2022**

**COMMITTEE ON EARTH SCIENCES AND APPLICATIONS FROM SPACE (CESAS)**

**OPEN SESSION**

Livestream Link: <https://livestream.com/accounts/7036396/events/10215071>

12:25 PM	Welcome	Everette Joseph and Steve Running, CESAS Co-Chairs
----------	---------	--

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

<b>12:30 PM</b>	<b>Open Source Science Initiative</b> (Presentation 30 min, Q&A 15 min.)	Celle Gentemann, Senior Scientist, Farallon Institute
<b>1:15 PM</b>	<b>Discussion with the NASA Chief Scientist</b>	Kate Calvin, NASA Chief Scientist
<b>2:00 PM</b>	<b>Break</b> (15 min.)	
<b>2:15 PM</b>	<b>Update from NOAA NESDIS</b> (Presentation 45min, Q&A 15 min.)	Steve Volz, AA for Satellite and Information Services
<b>3:15 PM</b>	<b>Update from USGS</b> (Presentation 30 min, Q&A 15 min.)	Tim Newman, Program Coordinator, NLI
<b>4:00 PM</b>	<b>Break</b> (15 min.)	
<b>4:15 PM</b>	<b>Update from NASA's Earth Science Division</b> (Presentation 45 min, Q&A 15 min.)	Karen St. Germain, Director ESD
<b>5:15 PM</b>	<b>Open Session Adjourns, committee reconvenes in Closed session</b>	

Thursday, March 24, 2022

## COMMITTEE ON EARTH SCIENCES AND APPLICATIONS FROM SPACE (CESAS)

### OPEN SESSION

Livestream Link: <https://livestream.com/accounts/7036396/events/10215154>

<b>12:00 PM</b>	<b>The Geodesy Crisis</b> (Presentation 30 min, Q&A 15 min.)	Dave Sandwell, CESAS
<b>12:45 PM</b>	<b>TBD</b>	TBD
<b>1:30 PM</b>	<b>Open session adjourns, Committee reconvenes in Closed session</b>	

### GENERAL NOTES

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.

### RECORDING OF THE MEETING

This meeting will be recorded on Zoom by the National Academies of Sciences, Engineering, and Medicine ("The Academies"). Please be aware that by attending the meeting, you consent to your voice and likeness being for use on the Committee's website and in any media now known or hereafter devised in perpetuity, and you release The Academies from any liability due to such usage.

Committee on Biological and Physical Sciences in Space Website: [Committee on Earth Sciences and Applications from Space | National Academies](#)

Space Science Week

The National Academies of  
SCIENCES • ENGINEERING • MEDICINE

For additional information on all the Space Science Week activities, please visit: [www.nas.edu/ssw](http://www.nas.edu/ssw)