

# SPACE SCIENCE WEEK

The National Academies of  
SCIENCES  
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## SPACE SCIENCE WEEK

### SPRING 2017 MEETING OF THE COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE

March 28-30, 2017

NAS Building – 2101 Constitution Ave NW – Washington D.C.

Updated March 23, 2017

#### Tuesday March 28, 2017

7:30 AM *Registration opens and breakfast is available in the Great Hall*

#### MORNING PARALLEL BREAK-OUT SESSION COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE (CBPSS)—Room 125

##### OPEN SESSION

9:00 AM **Welcome and Introductions** **Robert Ferl and Elizabeth Cantwell, Co-Chairs**

9:15 AM **Value and Impact Overview of ISS National Laboratory Portfolio** **Cindy Bouthot and Warren Bates  
CASIS**

10:00 AM **Update on SLPsRA Activities** **Craig Kundrot, NASA**

10:30 AM *Break food available outside room*

#### EXECUTIVE SESSION

10:45 AM to 12:00 PM **Committee Only**

12:00 PM *Lunch available in the Great Hall*

#### PLENARY SESSION Auditorium – NAS Building

**Moderator: Michael Moloney, SSB Director**

1:00 PM **Welcome and Overview of Current Activities** **Sarah Gibson, SSB Executive Committee  
Jim Lancaster, BPA Director**

1:15 PM **NASA-SMD Budget, Program, and Priorities** **Thomas Zurbuchen, NASA**  
*Presentation 20 mins / Q&A 25 mins*

#### Focus Session on The Discovery Frontiers of Data Analytics in Space Science

**Moderator: Sarah Gibson, SSB member**

2:00 PM	Short 15-minute Talks From Space Science Disciplines	Lea Shanley, University of North Carolina Barbara J. Thompson, NASA GSFC
2:45 PM	Moderated Discussion include Q&A with all Standing and Discipline Committee members in attendance	
3:30 PM	<i>Break Available in the Great Hall</i>	

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**Focus Session on International Programs**

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**Moderator: Michael Moloney, SSB Director**

4:00 PM	Russian Space Science Program Chinese Space Science Program Europe's Space Science Program	Lev Zelenyi, Russian Academy of Sciences Chi Wang, Chinese Academy of Sciences Athena Coustenis, European Space Sciences Committee
5:45 PM	<b>Closing Comments</b>	
6:00 PM	<i>Public Meeting Adjourns</i>	

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**Wednesday March 29, 2017**

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**COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE (CBPSS) – Room 125**

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7:30 AM	<i>Registration opens and breakfast is available in the Great Hall</i>
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**OPEN SESSION**

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**Symposium: Exploration Systems Interface with Biological and Physical Behaviors**

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8:50 AM	<b>Welcome and Introductions</b>	Robert Ferl and Elizabeth Cantwell, Co-Chairs
9:00 AM	<b>Framing the Discussion: Space Research in the Age of Translational Science</b>	James Pawelczyk Pennsylvania State University
9:45 AM	<i>Break available outside room</i>	
10:00 AM	<b>Spacecraft and Surface Habitation Technology Interface with Physical Phenomena</b> (Moderator: Elizabeth Cantwell, Arizona State University)	
		<b>Panelists:</b>
	<ul style="list-style-type: none"> <li>• Moderator Introduction</li> <li>• Panelist Remarks</li> <li>• Moderated Discussion</li> <li>• Q&amp;A</li> </ul>	Mark Weislogel, Portland State University James T'ien, Case Western Reserve University Michael Meyer, NASA Glenn Research Center Andrew Rush, Made In Space

12:00 PM	<b>General Discussion</b> <i>Lunch available in the Great Hall</i>
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1:30 PM	<b>Environmental Control and Life Support Systems for Human Spaceflight Missions</b>	Robyn Gatens, NASA
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2:30 PM	<i>Break food available outside room</i>
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2:45 PM	<b>Space Environment Interface with Humans and Biological Systems</b> (Moderator: Robert Ferl, University of Florida)	<b>Panelists:</b> Dave Reed, TechShot, Inc. Fred W. Turek, Northwestern University Jonathan Clark, Baylor College of Medicine Anna-Lisa Paul, University of Florida
4:45 PM	<b>Roundtable Discussion with all participants</b>	All
5:30 PM	<i>Adjourn</i>	

**OPEN SESSION**

6:30 PM	<b>Plenary Public Talk – The Search for Life in Oceans Beyond Earth</b>	Kevin P. Hand Jet Propulsion Laboratory
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<b>Thursday March 30, 2017</b>	
<b>COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE (CBPSS) – Room 125</b>	
<b>EXECUTIVE SESSION</b>	
<b>9:00 AM to 12:00 PM</b>	<b>Committee Only</b>

## GENERAL NOTES

**Pre-registration:** All participants, including committee members, invited speakers and other attendees, are strongly encouraged to preregister at <http://www.surveygizmo.com/s/3260581/SSW2017>.

**Registration** will be located in the Great Hall during the event. Please check-in there to receive your badge.

**NAS Building:** Is located at 2101 Constitution Ave., NW, between the State Department and the Vietnam Veterans Memorial. Additional information about the NAS Building is available at <http://www.nationalacademies.org/about/contact/nax.html>.

**Wi-Fi Connection:** To connect to the Wi-Fi chose "Visitor Network" then open up a browser and click "Accept terms and conditions." You will then be connected to the internet.

**Metro:** The closest Metro station (0.5 miles) is Foggy Bottom (Blue and Orange lines; exit and turn right, then turn left once you have passed the State Department).

**Parking:** Very limited parking is available onsite at the NAS. The 22 available parking spaces are first come first served. Other possible parking options are as follows:

- PMI (Columbia Plaza) – 2400 Virginia Avenue, NW.
- Colonial Parking – 515 20<sup>th</sup> Street, NW.
- GW Elliot School Garage is located near the Department of Interior at 1957 E Street NW.

**Space Science Week Website:** [http://sites.nationalacademies.org/SSB/SSB\\_177653](http://sites.nationalacademies.org/SSB/SSB_177653)

### 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 by the NRC. Please be aware that by attending the meeting, you consent to your voice being recorded for use by the NRC for the purpose of note-taking. This recording will not be publicly released, shared outside of the NRC, or used for other public purposes.

### VIDEOTAPING OF THE MEETING

3/29/2017

This meeting will be videotaped 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 videotaped 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.

## NOTES FOR PRESENTERS

If your presentation contains unpublished data, ITAR controlled and/or other sensitive information, please be aware that the open sessions at the meeting may be recorded and/or webcast. Presentation materials given to the committee may be posted on a publicly accessible website. Please edit your presentations accordingly.

Mac users should assume that their presentation will be displayed via one of the NRC's PCs. If your presentation is graphics heavy and best displayed via your own laptop, you should also bring a plain-vanilla pdf version of your presentation with you. The audience in the meeting room will see your presentation via your laptop and we will webcast the pdf file.

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.

#### REMOTE CONNECTION DETAILS

##### WebEx & Telecon Instructions

1. Click on the url (below).
2. Enter your name and email address (you will not be spammed) and click “Join Meeting”
3. Let WebEx load (may take a minute); once loaded, WebEx will immediately and automatically provide you a pop-up window to enter the phone number you would like to be called at (i.e. home, office, mobile) to join the telecon. Enter your phone number and click “Call me” and follow the prompts.
4. Enter the Meeting Password (below)
5. Teleconference only: Connection quality is much better via WebEx’s “Call me” feature, so we strongly recommend that you connect this way. If you are not able to do so, you can dial 1-866-668-0721 and enter the conference code (below).

##### Tuesday, March 28 – Open Session 9:00 am to 10:30 am

Meeting Name: CBPSS Open, Day 1 AM

Meeting Password: 03282017

Conference Code: 218 737 5164

Url: <https://nationalacademies.webex.com/nationalacademies/i.php?MTID=m426bd7208e9c9e4683c79a010e04400d>

##### Tuesday, March 28 – Plenary Open Session 1:00 pm to 6:00 pm

Meeting Name: SSW Plenary Session

Meeting Password: SSWPS2017

Conference Code: 255 641 6641

Url: <https://nationalacademies.webex.com/nationalacademies/i.php?MTID=m7528ecf5321cef2342eed9cde43cf440>

##### Wednesday, March 29 – Open Session 8:50 am to 5:30 pm

Meeting Name: CBPSS Symposium

Meeting Password: 03292017

Conference Code: 218 737 5164

Url: <https://nationalacademies.webex.com/nationalacademies/j.php?MTID=ma78b794c70300415d0cf3fec58b9999>