

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

DIVISION ON ENGINEERING AND PHYSICAL SCIENCES  
SPACE STUDIES BOARD  
AERONAUTICS AND SPACE ENGINEERING BOARD

**SPACE SCIENCE WEEK**

**SPRING 2016 MEETING OF THE COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE**

March 29-31, 2016

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

**FINAL AGENDA**

**Tuesday March 29, 2016**

**MORNING PARALLEL BREAK-OUT SESSION**

**COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE (CBPSS) – Room 120**

<b>7:30 AM</b>	<i>Registration opens and breakfast available in the Great Hall</i>	
<b>OPEN SESSION</b>		
<b>10:30 AM</b>	<b>Space Life and Physical Sciences Research and Applications (SLPSRA) Status Update</b>	<b>Marshall Porterfield, NASA</b>
<b>12:00 PM</b>	<b>General Discussion</b> <b>Lunch available in the Great Hall</b>	

**Tuesday March 29, 2016**

**PLENARY SESSION – Auditorium**

<b>1:00 PM</b>	<b>Welcome and Overview of Current SSB Activities</b>	<b>David Spergel, SSB Chair</b> <b>Jim Lancaster, BPA Director</b> <b>Michael Moloney, SSB Director</b>
<b>1:30 PM</b>	<b>NASA-SMD Budget, Program, and Priorities</b> <i>Presentation 15 mins / Q&amp;A 15 mins</i>	<b>John Grunsfeld, NASA</b>

**Focus Session on International Programs and Cooperation**

<b>2:00 PM</b>	<b>ESA Science Program</b>	<b>Alvaro Gimenez, ESA</b>
	<b>ESA Earth Observation Program</b>	<b>Maurice Borgeaud, ESA</b>
	<b>CAS-NSSC Science Program</b>	<b>Chi Wang, CAS</b>
	<b>JAXA Science Program</b>	<b>Saku Tsuneta, JAXA</b>
	<b>DLR Science Program</b>	<b>Pascale Ehrenfreund, DLR</b>

<b>3:15 PM</b>	<b>Discussion Panel on International Collaboration (Moderated by David Spergel, SSB Chair)</b> <b>Panel Members: Maurice Borgeaud, Pascale Ehrenfreund, Alvaro Gimenez,</b> <b>John Grunsfeld, Saku Tsuneta, Chi Wang</b>
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<b>4:00 PM</b>	<i>Break Available in the Great Hall</i>	
<b>4:20 PM</b>	<b>Briefing on SSB study on NASA Science Mission Extensions</b>	<b>Vicky Hamilton, Cmmtee Co-Chair</b>
<b>4:50 PM</b>	<b>Perspectives from Congressional Staff</b>	
<b>5:20 PM</b>	<b>Space Launch System for Science Presentation</b>	<b>Angela Jackman, NASA MSFC</b>

5:50 PM	<b>Closing Comments</b>
5:55 PM	<i>Public Meeting Adjourns</i>
6:00 PM	<i>Reception by invitation in the West Court</i>
7:00 PM	<i>Dinner by Invitation in the Great Hall</i>

**Wednesday March 30, 2016**

**COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE (CBPSS) – Room 120**

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

**Symposium: Research in Commercial LEO**

8:50 AM	<b>Welcome and Introductions</b>	Robert Ferl and Elizabeth Cantwell, Co-Chairs
9:00 AM	<b>Framing the Discussion: NASA Intentions for Commercial LEO</b>	Sam Scimemi, NASA
9:40 AM	<b>Perspectives on LEO Ecosystems</b>	Michael Roberts and Cynthia Bouthot, CASIS
10:10 AM	<i>Break available outside room</i>	
10:20 AM	<b>Providers Panel</b> (Moderator: Betsy Cantwell, Arizona State University)	
		<u>Panelists:</u> Mike Gold, Bigelow John Olson, Sierra Nevada Frank Culbertson, Orbital ATK Chris Cummins, NanoRacks
	<ul style="list-style-type: none"> <li>• Moderator Introduction</li> <li>• Panelist Remarks</li> <li>• Moderated Discussion</li> <li>• Q&amp;A</li> </ul>	
12:30 PM	<b>General Discussion</b> <i>Lunch available in the Great Hall</i>	
2:00 PM	<b>Customers Panel</b> (Moderator: Rob Ferl, University of Florida)	
		<u>Panelists:</u> Kenneth Savin, Eli Lilly Paul Reichert, Merck Rich Glover, ACME Advanced Materials, Inc. Brian Hess, LaunchPad Medical Steven Collicott, Purdue University
	<ul style="list-style-type: none"> <li>• Moderator Introduction</li> <li>• Panelist Remarks</li> <li>• Moderated Discussion</li> <li>• Q&amp;A</li> </ul>	
4:00 PM	<i>Break available outside room</i>	
4:10 PM	<b>Roundtable Discussion with all participants</b>	All
5:00 PM	<b>Economic Considerations for LEO Research Platform Markets</b>	Ioana Cozmuta, NASA Ames
5:30 PM	<i>Buffet dinner by invitation in the West Court</i>	
		<b>OPEN SESSION</b>
6:45 PM	<b>Plenary Public Talk – <i>Mission to Pluto: Exploring the Frontier of Our Solar System</i></b>	
		Alan Stern, Southwest Research Institute

## GENERAL NOTES

**Pre-registration:** All participants, including committee members, invited speakers and other attendees, are strongly encouraged to preregister at <http://sgiz.mobi/s3/cbcd3c2f0e7f>.

**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>.

**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 available parking options are as follows:

- PMI (Columbia Plaza) – 2400 Virginia Avenue, NW. Phone (202) 785-2448. The daily rate is \$24.
- Colonial Parking – 515 20<sup>th</sup> Street, NW. Phone (202) 296-5700. The daily rate is \$11.00.
- GW Elliot School Garage is located near the Department of Interior at 508 19th Street, NW. The daily rate is \$17.00.

**Space Science Week Website:** [http://sites.nationalacademies.org/SSB/SSB\\_170495](http://sites.nationalacademies.org/SSB/SSB_170495)

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

## 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 a PC. 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.

Due to room logistics, panel speakers should plan on providing a file of any slides they have rather than displaying their slides via laptop.

## REMOTE CONNECTION DETAILS

### WebEx & Telecon Instructions:

Go to <https://nationalacademies.webex.com/>

1. Click on the meeting name (below) you want.
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 29 OPEN SESSION 10:30AM to 12:00 PM

Meeting Name: CBPSS Day 1 Open - Space Science Week

Meeting Password: spaceweek (case sensitive)

Conference Code: 797 795 6056

### TUESDAY MARCH 29 PLENARY SESSION 1:00 PM to 6:00 PM

Meeting Name: SSW Plenary Session

Meeting Password: spaceweek (case sensitive)

Conference Code: 255 641 6641

### WEDNESDAY MARCH 30 OPEN SESSION 8:50 AM to 5:30 PM

Meeting Name: CBPSS Day 2 Open - Space Science Week

Meeting Password: spaceweek (case sensitive)

Conference Code: 797 795 6056

### WEDNESDAY MARCH 30 PUBLIC LECUTRE 6:45 PM

<https://livestream.com/accounts/7036396/SSWLecture2016>

Please join us for a public lecture



**MISSION TO PLUTO:**  
EXPLORING THE FRONTIER OF OUR SOLAR SYSTEM  
*The 2016 Space Science Week Public Lecture*

**FEATURING ALAN STERN**  
*Principal Investigator of the New Horizons Mission*

MARCH 30, 2016 AT 6:45PM  
NATIONAL ACADEMY OF SCIENCES  
2101 CONSTITUTION AVE., N.W.  
WASHINGTON, D.C. 20418

Register at: [nas.edu/SSWLecture](http://nas.edu/SSWLecture)

Image Credit: ISPCS

## REGISTER ONLINE

After nearly a decade of traveling to the outer reaches of the solar system, the New Horizons spacecraft provided the first glimpses of Pluto and its five moons, revealing an astonishing new world of vast, frozen planes and icy mountains. Discover Pluto for yourself along with New Horizons' Principal Investigator Alan Stern during a FREE public lecture to celebrate Space Science Week 2016.

For more information, please visit [nas.edu/SpaceScienceWeek](http://nas.edu/SpaceScienceWeek)

