SPACE STUDIES BOARD

Spring 2023 Meeting of the Discipline Committees of the Space Studies Board
March 28-30, 2023
ALL TIMES IN US EASTERN DAYLIGHT TIME (UTC-4:00)

COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE
PUBLIC DRAFT AGENDA

TUESDAY, MARCH 28, 2023

Space Science Week Plenary Session
Located in the Auditorium

Introductions and JWST Science Update

Public Livestream link: https://vimeo.com/event/2973366

7:30 AM	*Registration opens in the Great Hall*	
11:00 AM	**Introductions**	***Dr. Margy Kivelson*** ***SSB Chair***
11:05 AM	**Panel: JWST Science Update** (15-minute presentation each and 15-minute discussion) ***Moderator:*** ***Dr. Colleen Hartman, SSB Director*** ***Panelists:*** ***Dr. Tommaso Treu, University of California, Los Angeles, via Zoom*** ***Dr. Steven Finkelstein, The University of Texas at Austin, via Zoom*** ***Dr. Thomas Greene, NASA Ames Research Center***	
12:05 PM	*Lunch in the Great Hall* *(60-minute break; additional seating in the East and West Courts)*	

NASA, NSF, and NOAA Science Program Update

1:00 PM	**Welcome**	***Dr. Margy Kivelson*** ***SSB Chair***
1:05 PM	**Address by NASA Associate Administrator** (20-minute address)	***Mr. Bob Cabana*** ***NASA Associate Administrator***
1:25 PM	**NASA Science Mission Directorate (SMD) Overview** (30-minute presentation and 30-minute discussion)	***Dr. Nicky Fox*** *SMD* ***Associate Administrator, NASA***
2:25 PM	**National Science Foundation (NSF) Science Program Update**	***Dr. Sean Jones, Director, Directorate for Mathematical and Physical Sciences, NSF***

This agenda was last updated on 3/27/2023 3:20 PM

(20-minute presentation and 10-minute discussion)

3:25 PM *Break*
(25-minute break)

International Partners' Presentations

3:50 PM **Introduction of International Partners** **Dr. Margy Kivelson, SSB Chair**

3:55 PM **European Space Agency (ESA) Program Science Highlights** ***Dr. Carole Mundell, Director of Science, ESA***
(15-minute presentation and 10-minute discussion) ***Dr. Gaitee Hussain, Head of Science Division, ESA***

4:20 PM **Japanese Aerospace Exploration Agency (JAXA) Science Highlights** ***Dr. Masaki Fujimoto***
(15-minute presentation and 10-minute discussion) ***Deputy Director General, JAXA***

4:45 PM **South Korean Science Highlights** ***Dr. Young Deuk Park, President***
(15-minute presentation and 10-minute discussion) ***Korean Astronomy and Space Science Institute***

5:10 PM **Indian Space Research Organization Science Highlights** ***Mr. Krunal Joshi, Counsellor, Space***
(15-minute presentation and 10-minute discussion) ***Embassy of India***

5:35 PM *Break*
(25-minute break)

Special Session on NASA's Artemis Program

6:00 PM **Panel: How Science is Managed within the Artemis Program**
(35-minute presentation from panel members and 25-minute discussion)
Moderator: ***Dr. Colleen Hartman, SSB Director***
Panelists: ***Mr. Jim Free, NASA-ESDMD***
Dr. Joel Kearns, NASA-SMD
Dr. Brett Denevi, JHU-APL
Dr. Jack Burns, U. Colorado

7:05 PM *Plenary Session Adjourns for the Day*

WEDNESDAY, MARCH 29, 2023

Committee on Biological and Physical Sciences in Space
CLOSED SESSION

8:00 AM — *Registration and Working Breakfast in the Great Hall*
(30 min)

***8*:30 AM** — **Committee and Staff Only**

8:45 AM — *Closed Adjourns / Short Break and Reconvene in Open Session*
(15-min)

Committee on Biological and Physical Sciences in Space
OPEN SESSION

Public Livestream link: https://vimeo.com/event/2973346

***9*:00 AM** — **NASA BPS Update**
(45 min total; 30 min presentation; 15 min Q&A)
Moderator: Douglas Matson (virtual)
Diane Malarik, NASA-SMD BPS

9:45 AM — *Break and Switch Meeting Rooms to the Lecture Room for the Joint Session with CAPS*
(30-min break)

***10*:15 AM** — **NASA Lunar Science Strategy Joint Session with Committee on Astrobiology and Planetary Sciences (CAPS)**
(120 min total; 30 min presentation each; 30 min Q&A)
Moderators: Steven Collicott, CBPSS and Clive Neal, CAPS

Lunar Exploration and Discovery Program Update — ***Joel Kearns, NASA Headquarters***
NASA's New Lunar Science Strategy Report — ***Sarah Noble, NASA Headquarters***
NASA Lunar Biological and Physical Research Activities — ***Kevin Sato, NASA-SMD BPS*** (virtual)
Q&A and Discussion — ***Committee and Guests***

12:15 PM — *Working Lunch in the Great Hall*
(75-min)

1:30 PM — **CASIS Program Update & Research Opportunities with ISS Commercial Services**
(90 min total; 30+20+20 min presentation; 20 min Q&A)
Moderators: Jessica Scott, Jana Stoudemire
Ramon Lugo, CASIS (virtual)
Danilo Tagle, NIH (virtual)
Nicole Wagner, LambdaVision

3:00 PM — *Break*
(20-minute break)

***3*:20 PM** — **Early-Career Panel in BPS**
(60 min total; 10 min presentation each; 20 min Q&A)
Moderators: Ajay Agrawal and Mo Kassemi
Yu-Chien (Alice) Chien, University of California, Irvine
Andrea Henle, Carthage College
Aleksandra Radlińska, The Pennsylvania State University
Stefano Sacanna, New York University

4:20 PM **Space Workforce 2030 Pledge**
(60 min total; 15 min presentation each; 15 min Q&A)

Moderators: Ajay Agrawal and Mo Kassemi

Marty Whelan, Aerospace Corp.
Bill Kindred, Blue Origin (virtual)
Neela Rajendra, JPL

Public Lecture Session

Public Livestream Link: https://vimeo.com/event/2973372

7:00 PM **An Infinity of Worlds: Cosmic Inflation and the Beginning of the Universe**

Dr. William Kinney
Professor, Dept. of Physics
University of Buffalo

Abstract:
In the beginning was the Big Bang: an unimaginably hot fire almost fourteen billion years ago in which the first elements were forged. The physical theory of the hot nascent universe -- the Big Bang -- was one of the most consequential developments in twentieth-century science. And yet it leaves many questions unanswered: Why is the universe so big? Why is it so old? What is the origin of structure in the cosmos? Physicist Will Kinney explains a more recent theory that may hold the answers to these questions, and sheds light the ultimate origins of the universe: cosmic inflation.

Speaker Biography:
Will Kinney is a professor in the Department of Physics at the University at Buffalo, SUNY, where he has been on faculty since 2003. Dr. Kinney received his Bachelor of Arts from Princeton University, and PhD from the University of Colorado, Boulder. He has worked as a research associate at Fermi National Accelerator Laboratory, the University of Florida, and Columbia University, and held visiting positions at Yale University, Perimeter Institute for Theoretical Physics, Harish Chandra Research Institute, Allahabad, the University of Chicago, the University of Valencia, Indian Institute of Technology Madras, and Stockholm University. Dr. Kinney's research focuses on the physics of the very early universe, including inflationary cosmology, the Cosmic Microwave Background, Dark Matter, and Dark Energy. He has authored more than seventy published research articles and received the SUNY Chancellor's award for excellence in teaching in 2014.

THURSDAY, MARCH 30, 2023

Committee on Biological and Physical Sciences in Space
CLOSED SESSION

8:00 AM	*Registration and Working Breakfast in the Great Hall* *(45-min)*
8:45 AM	**Committee and Staff Only**
1:00 PM	*Meeting Adjourns*

REMOTE CONNECTION DETAILS

Topic	Time	Join URL
Space Science Week Plenary Session	**8:00 AM/11:00 AM**	Public livestream: *https://vimeo.com/event/2973366*
CBPSS Open Session	**6:00 AM/9:00 AM**	Public livestream: https://vimeo.com/event/2973346
Keynote Space Science Week Public Lecture	**4:00 PM/7:00 PM**	Public livestream: https://vimeo.com/event/2973372

IMPORTANT NOTES

Pre-Registration: All participants, including committee members, invited speakers and other attendees, are strongly encouraged to preregister at https://cvent.me/NXyGwy.

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

SSW Website: https://www.nationalacademies.org/event/03-27-2023/space-science-week-2023

NAS Building: Is located at 2101 Constitution Ave. NW, between the State Department and the Vietnam Veterans Memorial. Visitors must show a valid government ID (or a digital photo of the card) to the security staff at the NAS Building. Additional information about the NAS Building is available at http://www.nationalacademies.org/about/contact/nax.html.

COVID Policies: Please see the most recent information available at https://www.nationalacademies.org/about/operating-status.

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

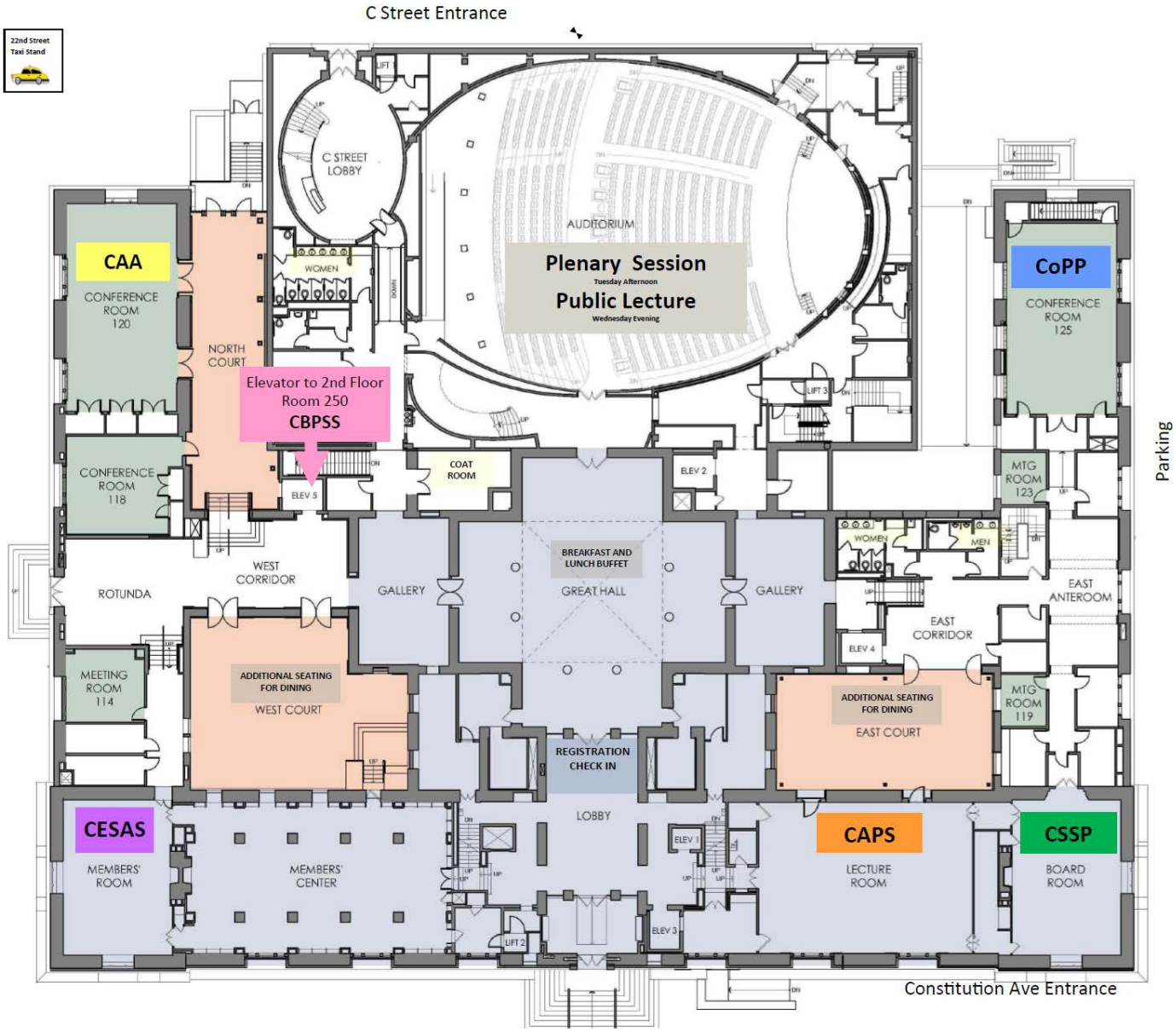
Metro: The closest Metro station (0.5 miles) is Foggy Bottom (Blue, Orange, and Silver lines; exit and turn right, then turn left onto C Street once you have passed the State Department.

Parking: Very limited public parking is available onsite at the NAS. The 22 available parking spaces are available first come first served and fill rapidly. Note: construction on 21st St. may impact access to the garage at the NAS Building via Constitution Avenue. If so, the garage can be accessed from 21st via C Street and the arm may be raised to temporarily allow access from 22nd St NW.

Notes for All Attendees: 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, 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 and Webcasting of the Meeting: This meeting will be recorded and webcast to remote participants by the National Academies. Please be aware that by attending the meeting, you consent to your voice and image being recorded for use by the National Academies for the purpose of notetaking. This recording will not be publicly released, shared outside of the National Academies, or used for 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 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.



March 28-30, 2023

CAA	Room 120
CAPS	Lecture Room
CBPSS	Room 250
CESAS	Member's Room
CoPP	Room 125
CSSP	Board Room