

NATIONAL  
ACADEMIES

Sciences  
Engineering  
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# Committee on Biological and Physical Sciences in Space (CBPSS)

Space Studies Board Meeting  
November 20, 2024

*Jessica Scott, Memorial Sloan Kettering Cancer Center*

Disclaimer: These slides are a personal assessment of issues discussed during recent Committee on Biological and Physical Sciences in Space meetings and should not be cited or quoted as the views expressed do not necessarily reflect those of Committee, the SSB, the ASEB or the Academies.

# CBPSS Status

- Membership
- 2024 Fall Meeting
- Top Level Issues

# Membership

- **Douglas M. Matson, Tufts University**
- **Jessica Scott, Memorial Sloan Kettering Cancer Center**
- Ajay K. Agrawal, University of Alabama
- Anna C. Balazs, NAS/NAE, University of Pittsburgh
- Debjyoti Banerjee, Texas A&M University\*
- Yu-Chien (Alice) Chien, University of California, Irvine
- Dennis E. Discher, NAE/NAM, University of Pennsylvania
- Robert W. Hyers, Worcester Polytechnic Institute\*
- Ajay P. Malshe, NAE, Purdue University
- Anna-Lisa Paul, University of Florida
- Clayton A. Simien, University of Alabama at Birmingham
- Jana Stoudemire, Axiom Space
- Martha H. Vitaterna, Northwestern University\*
- Deborah S. Wells, Leidos, Inc.\*

## Co-Chairs

\* Served on 2023 BPS Decadal Survey

# 2024 Fall Meeting

- Committee met over October 8-10, 2024
- Focus on updates from NASA BPS programs
- Also held sessions on:
  - Transitioning from the ISS to Commercial Platforms
  - Retrospective on Blue Origin Flight NS-26
  - The Science of the PFaST (Probing the Fabric of Space-Time) Campaign
  - Working Towards MATRICES (Manufacturing mATeRials and proCEsses for Sustainability in Space) Campaign
  - Enabling the Study of Polar Radiation of Model Organisms



## How will Decadal Survey decision rules will fare if budgets decline?

1. **If the NASA BPS Division receives *less* federal funding than anticipated, maintaining funding levels on KSQs that hit research milestones in the prior budget year is prioritized.**
2. If researchers are granted *less* crew time or upmass on ISS, technical/biological replicate experiments are prioritized.
3. If researchers have *less* access to CLDs, projects focused on KSQs representing at least the adapting to space theme and probing hidden phenomena theme are prioritized until answered.
4. **If NASA anticipates *less* cooperation and co-funding, KSQs that enable space exploration are prioritized.**
5. If international collaboration *contracts*, KSQs and research campaigns that include industry cooperation are prioritized to enable continued progress on these research programs.

*(Worse case)*

## What additional assistance can our National Academies Boards and Committees provide to the agencies and the community?

- We can continue to spotlight different research areas in the community regardless of budget trends e.g. physical sciences
- We are well-positioned to convene representatives from other federal agencies whose work is relevant to NASA e.g. NSF, NIH

# Backup

# Fall Meeting – NASA BPS Sessions

- Division Update
  - Lisa Carnell, Division Director
  - Diana Ly, Deputy Division Director
- Space Biology Program, “Precision Health” Goal & “Space Crops” Goal
  - Lynn Harrison, Program Scientist
  - Elisa Blancaflor, Portfolio Scientist
- Physical Sciences Program, “Foundations” Goal
  - Brad Carpenter, Program Scientist
- Fundamental Physics Program, “Quantum Leaps” Goal
  - Mike Robinson, Program Scientist
- Moon to Mars & “Space Lab” Goal
  - Kevin Sato, Program Scientist for Exploration



# Fall Meeting – Non-NASA BPS Sessions and Panels

- Panel: Transitioning from the ISS to Commercial Platforms
  - Kirt Costello, NASA
  - Robyn Gatens, NASA
  - Francisco Cordova, CASIS
- Retrospective on Blue Origin Flight NS-26
  - Rob Ferl & Anna-Lisa Paul, University of Florida
- Panel: The Science of the PFaST (Probing the Fabric of Space-Time) Campaign
  - Carolyn Mercer, NASA
  - Andrei Derevianko, University of Nevada, Reno
  - Jason Williams, JPL

## Fall Meeting – Non-NASA BPS Sessions and Panels

- Panel: Working Towards MATRICES (Manufacturing mATeRials and proCEsses for Sustainability in Space) Campaign
  - John Vickers, NASA
  - Danielle Wood, MIT
- Panel: Enabling the Study of Polar Radiation of Model Organisms
  - Michael Pecaut, Loma Linda University
  - William Gerstenmaier, SpaceX