The National Academies of
SCIENCES • ENGINEERING • MEDICINE

DIVISION ON ENGINEERING AND PHYSICAL SCIENCES
AERONAUTICS AND SPACE ENGINEERING BOARD

SPACE TECHNOLOGY INDUSTRY-GOVERNMENT-UNIVERSITY ROUNDTABLE

National Academy of Sciences Building
Room 120

- **Taxi drop-off:** 2101 Constitution Ave NW, Washington, D.C.
- **Parking lot entrance:** Southwest corner of C Street and 21st St, NW.
- **Taxi stand to depart:** 22nd St NW at C St NW.
  Exit the C St entrance to the NAS building (at the side of the building opposite from the Constitution Ave entrance), then turn left and walk to the corner.

AGENDA

(as of 3/12/2019)

Thursday, March 14, 2019

7:30am **Room opens** (breakfast available in meeting room)

8:30am **Meeting convenes**
Welcome
- Wanda Sigur, STIGUR Chair
- Jim Reuter, NASA Space Technology Mission Directorate (STMD) Associate Administrator (Acting)

8:35am **NASA and STMD Update: Programs, Organization, and Budget**
- Jim Reuter, STMD Associate Administrator (Acting)
- Steve Jurczyk, NASA Associate Administrator

Key Topics
- Impact of government shutdown
- FY 2019 budget request
- NASA reorganization
- Impact of ongoing changes on STMD program

9:15am **STIGUR Feedback and Discussion**

9:30am **Panel 1. On-Orbit Servicing, Assembly and Manufacturing (OSAM)**
The session will consist of a series of short presentations to be followed a general discussion with roundtable members.

Background. DARPA and Maxar Technologies' SSL division have been jointly sponsoring development of Robotic Servicing of Geosynchronous Satellites (RSGS). Maxar has recently

decided to cancel its participation, which puts the future of the project in doubt. (See https://bit.ly/2S2EONG).

STIGUR Discussion Objective. Engage the Roundtable in an assessment of on-orbit technologies and commercial readiness. Discuss options for NASA to accelerate the state of practice and commercial opportunities.

Key Questions

1. What are current plans, strategies and timelines for on-orbit secondary operations?
2. What are the key capabilities of particular interest to users?
3. What are the key challenges that must be overcome to enable these capabilities?
4. What role could NASA play in overcoming these challenges?
5. What are the current outlook projections and expectations of government/ NASA in those projections?

9:30am **Introduction**

- Moderator: Al Tadros, STIGUR member

9:40am **Opening Remarks** *(10 minutes each)*

- Ben Reed, Deputy Director, Satellite Servicing Projects Division, NASA Goddard Space Flight Center
- Ben Corbin, IDA Science and Technology Policy Institute
- Al Tadros, Vice President, Civil and DoD Business, Space Systems/Loral
- Daniel Faber, CEO, Orbit Fab, Inc.
- Jim Armor, Vice President, Government Services, Space Logistics/ Director, Government Relations, Northrop Grumman

10:30am **Break**

10:45am **Discussion**

12:00pm **STIGUR Feedback**

12:30pm **Lunch**

1:30pm **Panel 2. Advanced Nuclear Technologies: DOE and DOD**
The session will consist of a series of short presentations to be followed a general discussion with roundtable members.

Background. This panel would build on the discussion at the October 2018 STIGUR meeting of small fission reactors and advanced radioisotope power systems.

STIGUR Discussion Objective. Engage the Roundtable in identifying options for NASA to accelerate flight of a nuclear reactor powered mission by using technologies being developed by other agencies.

Key Questions

1. What (unclassified) new types of nuclear reactors are under development by DOD and DOE?
2. What are the expected capabilities of these new systems?
3. To what extent would it be feasible to adapt these systems for space exploration? (NASA's primary area of interest is currently surface nuclear power for the Moon and/or Mars. Other potential applications are in-space power and propulsion.)
4. What role could NASA play in adapting new reactor systems and technologies for space exploration?
5. How can new technologies accelerate current plans, e.g., Kilopower, for nuclear flight?
6. What value might ongoing research and technology development by DOE have to the DOD? (DOD equities.)

1:30pm **Introduction**

- Moderator: Doug Cooke, STIGUR member

1:40pm **Opening Remarks** *(10 minutes each)*

- Jeff Waksman, Program Manager, Strategic Capabilities Office, Office of the Under Secretary of Defense for Research and Engineering, OUSD(R&E)
- Tracey Bishop, Deputy Assistant Secretary for Nuclear Infrastructure Programs, Office of Nuclear Energy, US Department of Energy
- Stephen Johnson, Director, Space Nuclear Power and Isotope Technologies Div./ Director, Technical Integration Office, RPS, DOE Idaho National Laboratory
- David Poston, Chief Reactor Designer, DOE Los Alamos National Laboratory
- Paolo Venneri, Director of Advanced Projects, Ultra Safe Nuclear Corporation

2:30pm **Discussion**

3:30pm **Break**

3:45pm **STIGUR Feedback**

4:30pm **Summary, Feedback, Actions, and Plans for the Next Meeting (Oct 11, 2019)**

5:00pm **Adjourn**

Space Technology Industry-Government-University Roundtable
STATEMENT OF TASK

The Space Technology-Industry-Government-University Roundtable of the National Academies of Sciences, Engineering, and Medicine convenes senior-most representatives from industry, universities, NASA, and other government agencies to define and explore critical issues related to NASA's space technology research agenda that are of shared interest; to frame systems-level research issues; and to explore options for public-private partnerships. This forum is designed to facilitate candid dialogue among attendees to foster greater partnership among the NASA-related space technology community, and, where appropriate, carry awareness of consequences to the wider public.