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DIVISION ON ENGINEERING AND PHYSICAL SCIENCES
AERONAUTICS AND SPACE ENGINEERING BOARD

Aeronautics Research and Technology Roundtable
November 10, 2022
Keck Center Room 100
500 Fifth Street, NW
Washington, DC, 20001

November 10, 2022

Livestream Viewers Link: <https://vimeo.com/event/2574991>

OPEN SESSION

HYBRID MEETING

- 8:55 a.m. Meeting Convened, Welcome and Introductions John Langford, Chair
Roundtable Participants
- 9:45 a.m. Opening Remarks Bob Pearce, ARMD Associate Administrator, NASA
- 10:30 a.m. Discussion
- 11:15 a.m. *Break (15 minutes)*
- 11:30 p.m. US Aviation Climate Action Plan Overview James Hileman, FAA
- 12:30 p.m. *Working Lunch, Discussion Continues*
- 1:30 p.m. Sustainable Flight National Partnership (SFNP) Rich Wahls, NASA

On November 9, 2021, the Federal Aviation Administration (FAA) published the United States Aviation Climate Action Plan, which describes a whole-of-government approach to put the sector on a path toward achieving net-zero emissions by 2050. The plan builds on individual and sector-wide commitments announced by the U.S. aviation industry and highlights specific actions and policy measures to foster innovation and drive change across the entire U.S. aviation sector.

<https://www.faa.gov/sustainability/aviation-climate-action-plan>

NASA's cornerstone initiative in response to the Climate Action Plan is the Sustainable Flight National Partnership (SFNP). Through SFNP, NASA Aeronautics is engaging with industry, academia, and other agencies to accomplish the aviation community's goal of net-zero carbon emissions by 2050. Work focuses in three areas – advanced vehicle technologies, efficient airline operations, and sustainable aviation fuels – to enable 25-30 percent energy efficiency improvements in next-generation transports, to utilize 100 percent sustainable aviation fuel, and to fly optimal trajectories. The approach includes a full-scale technology demonstrator X-plane built to test an ultra-efficient aerodynamic design and possibly other new technologies, to solve the challenges of integrating those technologies and proving their predicted benefits in flight.

<https://www.nasa.gov/aeroresearch/sustainable-aviation-np/>

2:15 p.m.	Discussion	
3:00 p.m.	<i>Break (15 minutes)</i>	
3:15 p.m.	Discussion on Long-term Approaches for Zero Emission Beyond SFNP	John Cavolowsky, NASA Roundtable Participants
	NASA will introduce long-term approaches for roundtable discussion, including:	
	<ul style="list-style-type: none"> • Develop and use holistic system analysis and likely energy scenarios to identify transformative propulsion and integrated vehicle system architectures and enabling technologies and operational concepts • Cast a wide net and coordinate innovation across academia, industry, and NASA to support 2050+ concepts and technologies • Select, develop, and mature promising concepts in partnership with universities, industry, and Other Government Agencies (OGA) <ul style="list-style-type: none"> - Facilitate considerations of new energy paradigms diving to net-zero carbon and beyond - Address non-CO₂ climate (NO_x, AIC) and other environmental impacts (e.g., noise, local air quality). 	
4:15 p.m.	Roundtable Member Comments	John Langford, Chair Roundtable Participants
5:00 p.m.	<i>Meeting Adjourns</i>	

Last updated: November 3 (PM), 2022

Aeronautics Research and Technology Roundtable Statement of Task

The Aeronautics Research and Technology Roundtable (ARTR) convenes senior-most representatives from industry, universities and NASA to define and explore critical issues related to NASA’s aeronautics research agenda that are of shared interest; to frame systems-level research issues; and to explore options for public-private partnerships that could support rapid, high-confidence knowledge transfer. This forum will be designed to facilitate candid dialogue among participants, to foster greater partnership among the NASA-related aeronautics community, and, where appropriate, carry awareness of consequences to the wider public.

The following information is provided for any members of the general public who may be in attendance:

This meeting is being held to facilitate dialogue among the participants. This roundtable will examine the information and material obtained during this, and other meetings, in an effort to inform its work. Although opinions may be stated and lively discussion may ensue, no conclusions are being drawn at this time and no recommendations will be made by the roundtable. Therefore, observers should draw conclusions about the roundtable’s work based on today’s discussions. Furthermore, individual roundtable members often engage in discussion and questioning for the specific purpose of probing an issue and sharpening an argument. The comments of any given member may not necessarily reflect the position he or she may actually hold on the subject under discussion.

Meeting Logistics Notes

Keck Center: Is located at 500 Fifth St. NW, (we’re in Conference Room 100 on the 1st floor) in Washington’s Penn Quarter district, adjacent to Judiciary Square and the Verizon Center. The closest Metro stations are Gallery Place/Chinatown (Red, Green and Yellow lines; take “7th and F St.” exit and

turn left) and Judiciary Square (Red line; take National Building Museum exit and turn left). Directions available at the following website: <http://www.nationalacademies.org/about/contact/nax.html>.

- **Keck Security/ID Required:** Meeting attendees entering the building will need to show a photo ID to the Security Guard, who checks the ID against the attendee list.
- **Keck Parking:** There is plenty of free parking in the Keck Center's underground lot. Access to the lot is off of Sixth Street (between E and F Streets).
- **Masking and Vaccination Requirements:** The CDC recently updated its guidelines on masking, which affect federal contractors such as the National Academies. Masks are not required in our facilities. Of course, anyone may choose to wear a mask in our facilities at any time, and we urge everyone to be respectful of our personal decisions. Visitors **will still be required to show their up-to-date vaccination cards for entrance to our facilities.** Members of the public who wish to attend should contact the study director at dday@nas.edu
- **Wi-Fi Connection:** To connect to the Wi-Fi choose "Visitor Network" then open up a browser and click "Accept terms and conditions." You will then be connected to the internet.
- **Meals:** Breakfast and lunch will be available at the meeting. In order to remain in compliance with government guidelines that preclude civil servants from accepting meals, we have provided a break-down for civil servants needing to reimburse those costs. The reimbursement cost of breakfast is \$15, \$16 for lunch, and \$50 for dinner. Checks, payable to the National Academy of Sciences, are preferred. Or, Monumental Open Door Market is stocked with sandwiches, salads and a variety of snacks, the market offer fresh selections and are enabled with self-check-out for your convenience. The Keck Center market is in the serving area on the third floor of the atrium.