



NASA

**NASA HQ
Science Mission Directorate (SMD)
RIDESHARE**

**SmallSat 2020
NASA Town Hall
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Aly Mendoza-Hill – SMD Rideshare Lead, HPD Program Executive
Nicky Fox, HPD Division Director
Peg Luce, HPD Deputy Division Director
Alan Zide, SMD HPD Program Executive
David Cheney, SMD HPD Program Executive



Agenda

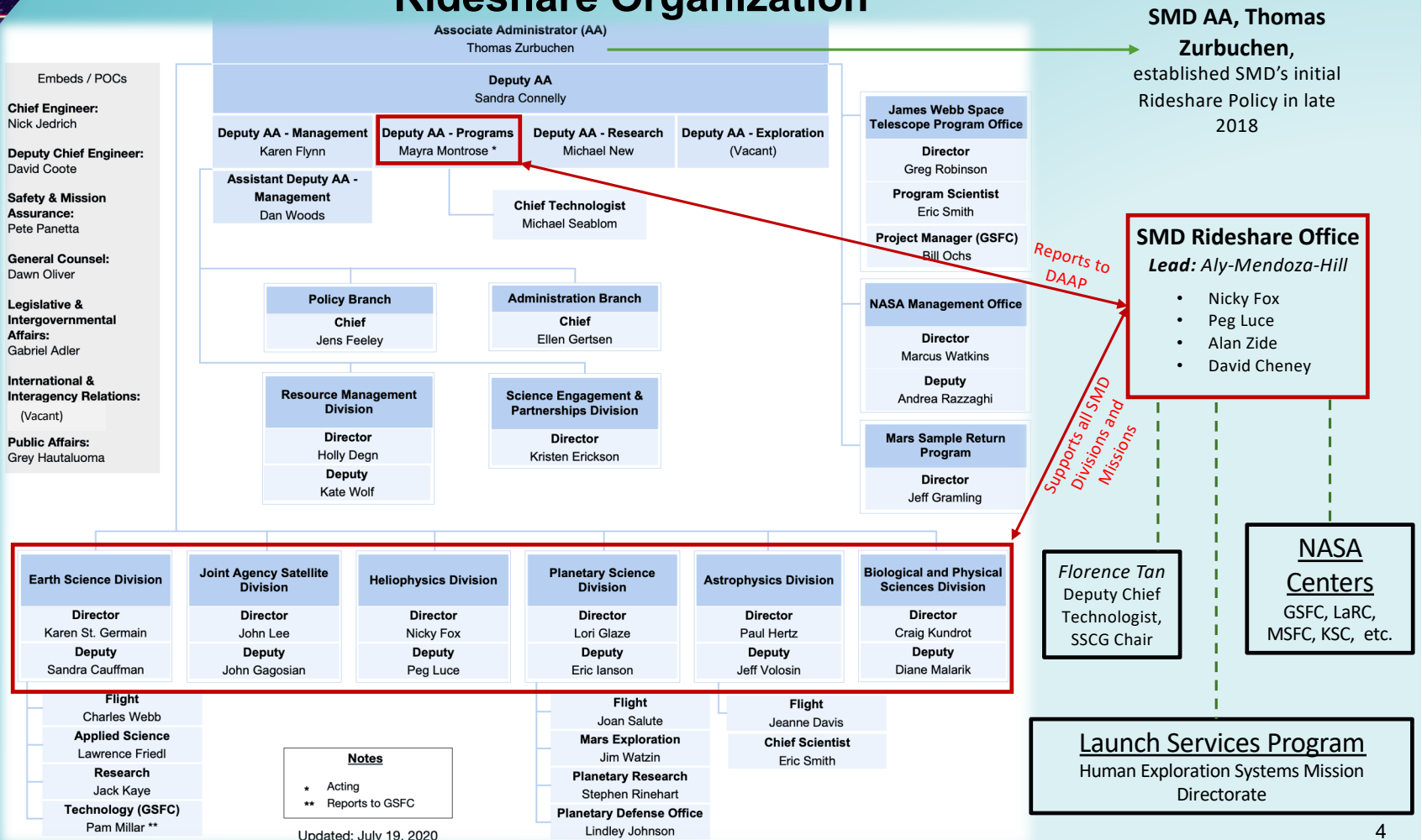
- SMD Rideshare Introduction
 - Rideshare Policy
 - Rideshare Office Organization & Leadership
- Rideshare Office Responsibilities
- SMD Rideshare Missions
 - Current
 - Future



NASA SMD Rideshare

- The Science Mission Directorate has issued a rideshare policy and established a Rideshare Office to develop standard rideshare processes for the SMD Directorate
- SPD-32 Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA) Secondary Payloads Rideshare
 - Baseline policy signed Oct. 2018; Policy updated Oct, 2019 (Rev 1)
 - SMD policy enables rideshare or launch accommodation opportunities using an ESPA ring integrated on the launch service procured for an SMD primary payload with identified excess performance.
 - SMD may offer any excess capacity not utilized for SMD investigations to other NASA Mission Directorates (MD), other U.S. Government Agencies, or NASA's International partners in accordance with international agreements for international collaborative efforts relating to science, technology, and exploration goals.
 - *** This policy only applies to ESPA-class payloads (not Cubesats, which are managed through the CSLI Program*
- SMD Rideshare Office
 - **Goal:** To provide a single POC for SMD Rideshare-related inquiries for both NASA Center and external partners; to maintain overall knowledge and tracking of Rideshare activities for SMD missions, and to ensure best utilization of excess LV performance to obtain maximum science on SMD missions

NASA HQ Science Mission Directorate Rideshare Organization





NASA SMD Rideshare Office

- The SMD Rideshare Office is located within the Heliophysics Division
 - Supports all SMD Divisions
 - Aly Mendoza-Hill is the Rideshare Lead for SMD
 - Other key SMD Rideshare Team Members: Alan Zide, Pete Wilczynski, Florence Tan, David Cheney
 - Works with NASA Center Rideshare POCs to create unified NASA/SMD Rideshare message; delegates tasks to appropriate Center POCs as required; does not replace Center-level Rideshare work
- We are currently developing a robust rideshare program to utilize excess mass to orbit and enable additional launch opportunities for the science community
 - Standardizing Announcement of Opportunity (AO) language and reviewing each AO for consistency
 - Developing key documents: SMD RS101, SMD RUG, SMD DNH requirements
 - Maintaining a list of SMD launch opportunities and tracking potential external launch opportunities
 - External information is made available on the Small Spacecraft Systems Virtual Institute [S3VI] website)
 - Performing a top-level payload compatibility analysis of rideshare missions to identify potential impacts to the primary payload or the success of the secondaries

SMD Missions: Current Rideshare Missions

Note: Dates are estimates and subject to change, excess launch capacity on some flights still TBD

Mission	Org	LV Class	Trajectory	LRD	Rideshare Adapter	RPLs
Landsat-9	ESD	AtlasV-401	Polar, 700km	4/8/21	ESPA Standard	~18 USSF & NASA cubesats
JPSS-2	JASD	AtlasV-401	SSO, Polar 810 km 1325 LTAN	03/31/22	ULA C-Adapters	LOFTID
Psyche	PSD	Falcon Hvy (ATP 2/28/20)	C3 ~ 30 (tbd)	July - Aug 2022	ESPA Standard	JANUS C3 ~25 (tbd) EscaPADE C3 ~25 (tbd)
PUNCH	HPD	Small/ Medium	SSO, 570 km 06:00 MLTAN	02/01/23	ESPA Grande (TBD)	TRACERS (TBD) inside ESPA-G 22:30 MLTAN
SPHEREx	APD	Intermed	SSO, 700 km 6am MLTAN	06/01/24	TBD	TBD
IMAP	HPD	Intermed	L1 C3 max <= -0.5 28deg incl	10/1/2024	ESPA Grande	SWFO-L1 / PSD LTB/ HPD TD MO/ HPD Sci MO

SMD Missions: Potential Rideshare Opportunities

Note: Dates are estimates and subject to change, excess launch capacity on most flights still TBD

Mission	Org	LV Class	Trajectory	LRD	Rideshare Adapter	RPLs
Sentinel 6B	ESD	Intermed/ Large?	LEO (1336km; 66deg (tbd))	Nov 2025	TBD	TBD
NEO Surveyor	PSD/PDCO	Intermed/ Large?	L1 (C3 tbd)	2025	TBD	TBD
MIDEX AO	HPD	Intermed	TBD	NLT Feb 2026	TBD	TBD
JPSS-3	JASD	Intermed	LEO SSO 13:30 MLTAN	2027	TBD	TBD
Dragonfly (MMRTG)	PSD	Large	Heliocentric (Saturn)	April 2026	TBD	TBD
Discovery AO	PSD	Intermed/ Large	Diff targets (Venus, Neptune, 2 Jupiter) C3 =17,18,24,31	2025/26- 2027/28	TBD	TBD