

National Aeronautics and
Space Administration



EXPLORE EARTH

Science Directorate in 15 minutes
Dr. Trina M. Dyal
Acting Director

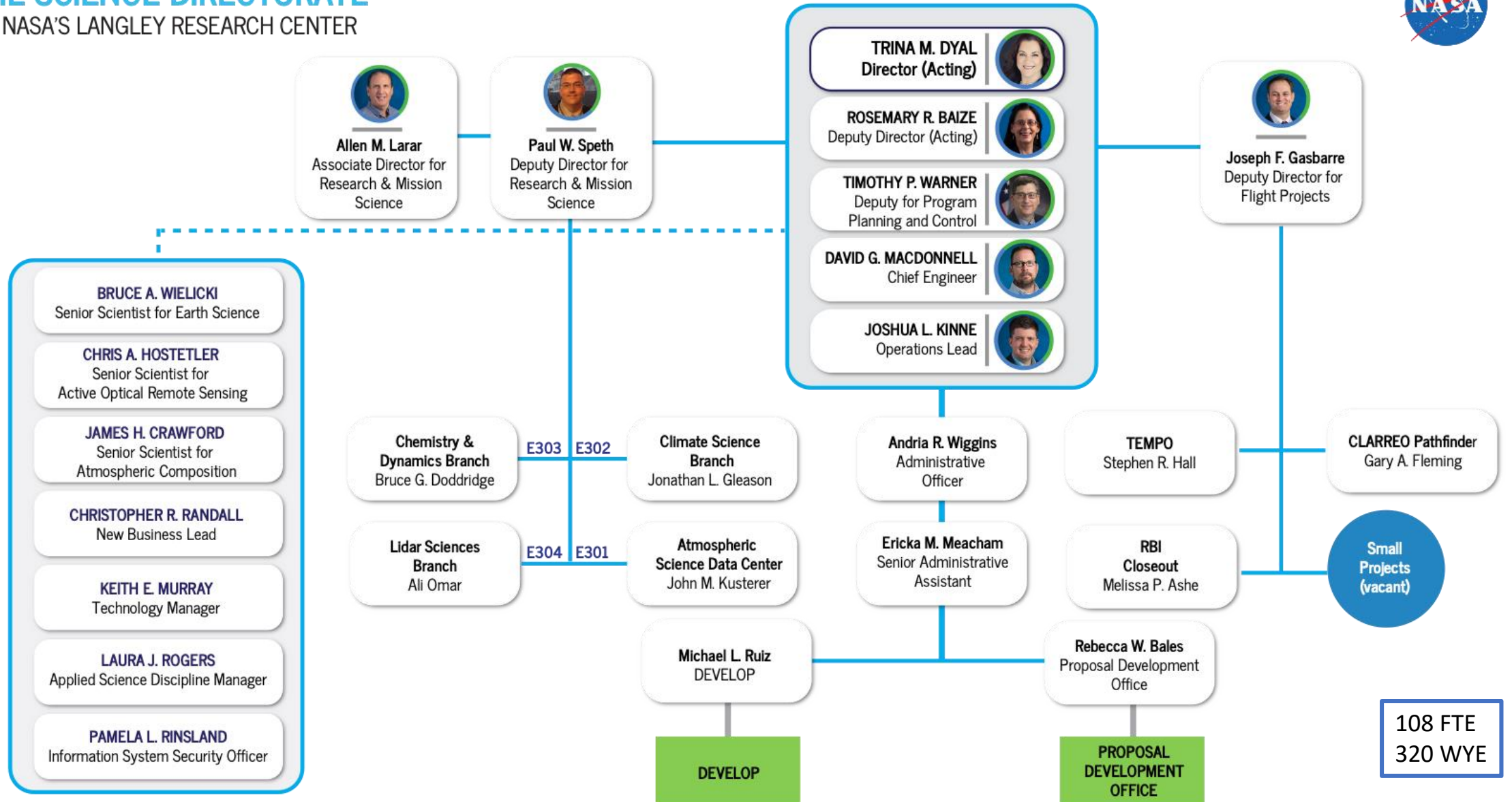


AGENDA

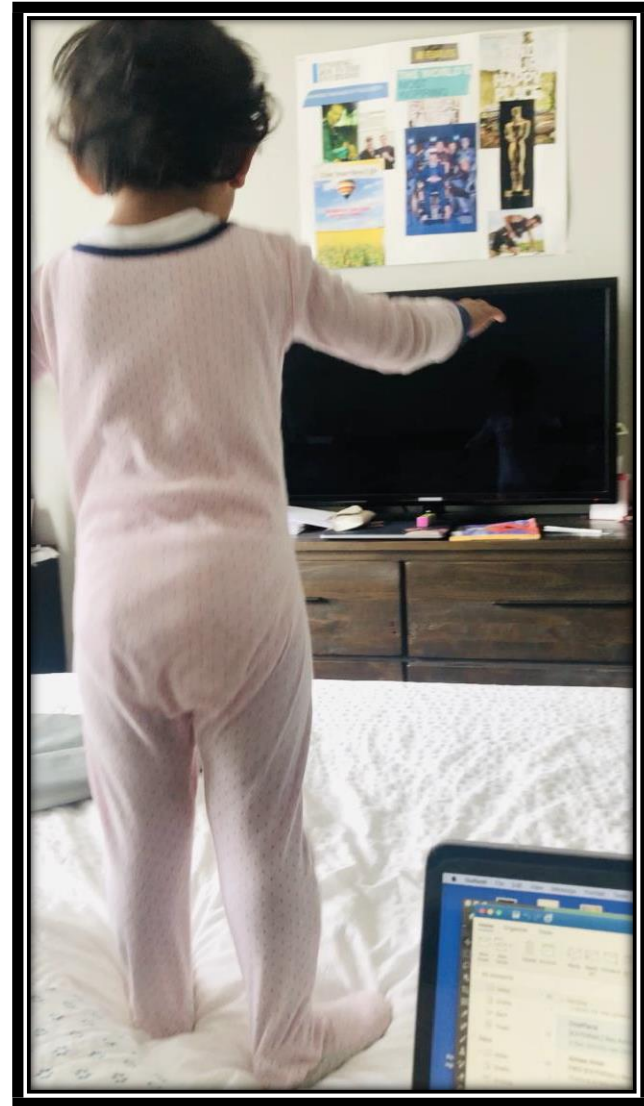
- Science Directorate – Big picture
 - Org chart – who is sitting at the table
- Our People
 - How we are coping with a pandemic
- Our Products
 - What we do – just a reminder
- HQ intel
- RTOW Status
- Family Budget
 - Hunger Games
- Opportunities
 - Rise of the Mockingjay



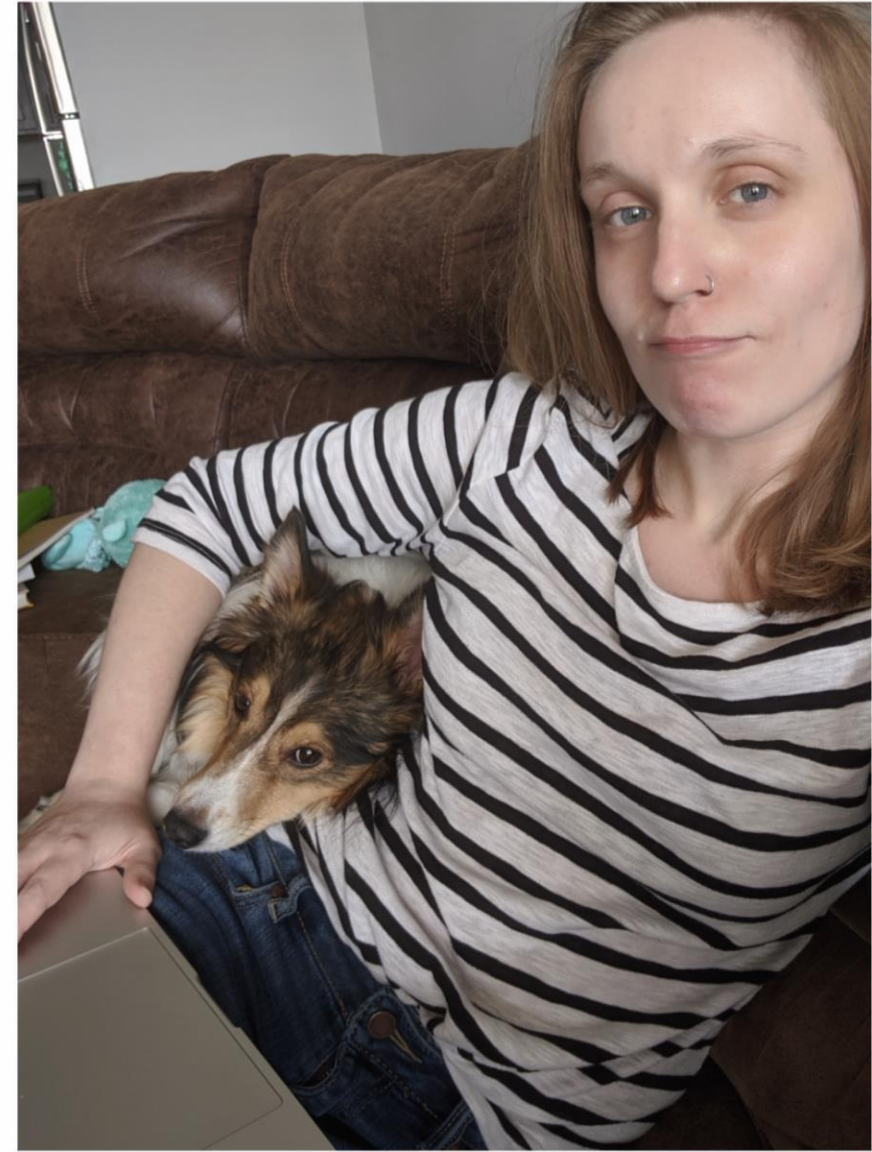
THE SCIENCE DIRECTORATE at NASA'S LANGLEY RESEARCH CENTER



Behind the
scenes when
Aimee is
muted



Erin knows the best way to make it through this struggle is with lots of snuggles.



**Marile's cozy office
with options to
loungue, teach or
cuddle**



Tiffany was able
to capture the
entire essence
of telework life
in this one
picture

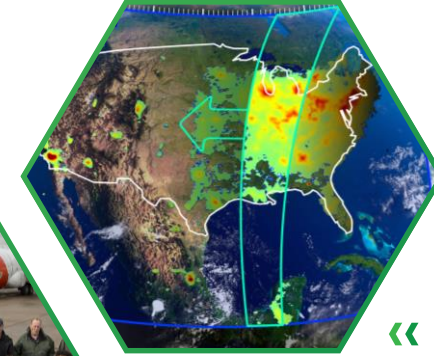
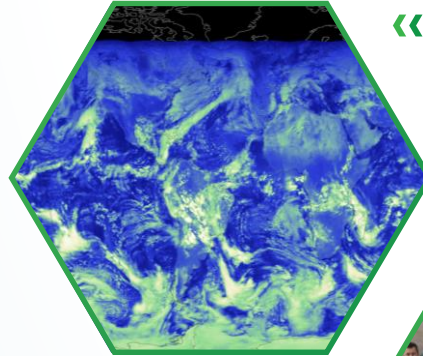




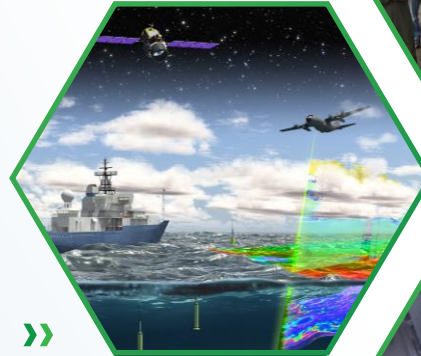
Explore Earth

Measurements and Missions

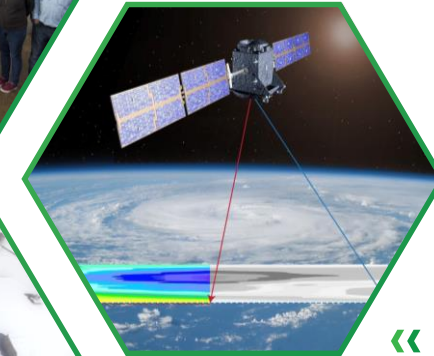
Earth Energy
« Budget



« Air Quality



Aerosols
& Clouds »

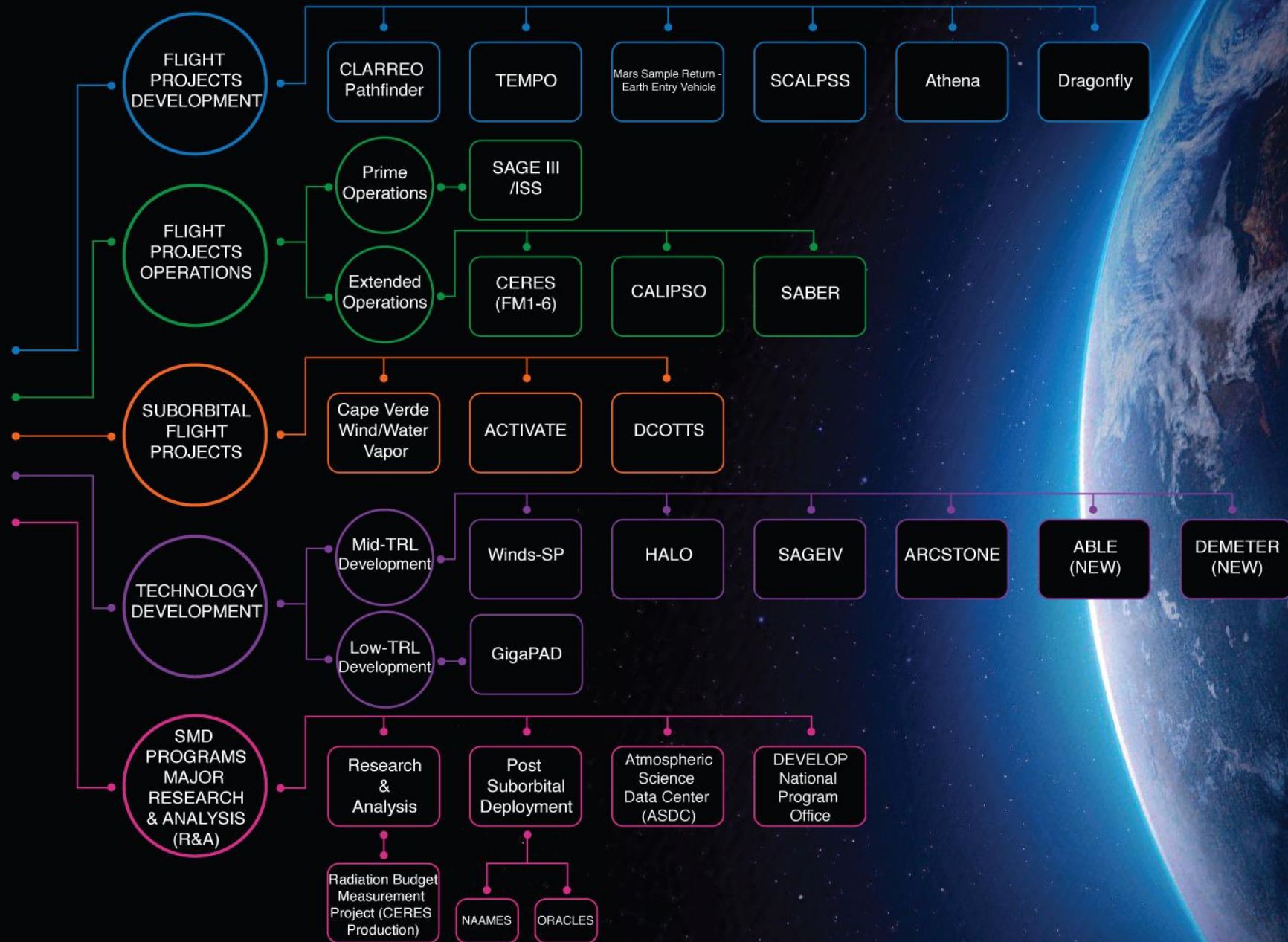


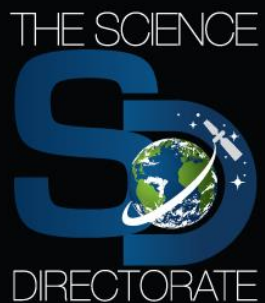
« Lidar remote sensing of
the atmosphere &
oceans



« Upper Atmosphere
Composition

THE SCIENCE
SS DIRECTORATE





FLIGHT
PROJECTS
DEVELOPMENT

FLIGHT
PROJECTS
OPERATIONS

SUBORBITAL
FLIGHT
PROJECTS

TECHNOLOGY
DEVELOPMENT

SMD
PROGRAMS
MAJOR
RESEARCH
& ANALYSIS
(R&A)

CLARREO Pathfinder

Category 3 LCC = \$136M
Class D Phase C

TEMPO

Category 3 LCC = \$203M (Total)
Class C Phase B (Mission)
Phase C (Instrument)

Mars Sample Return - Earth Entry Vehicle

Category 1 LCC = TBD
Class A (TBD) Pre-Phase A

SCALPSS

Category 3 LCC = \$1.45M
Type E Phase A/B

Athena

Category 3 LCC = \$3M+
Type E Phase A/B

Dragonfly

*Providing EDL & other
support to JHUAPL & ARC

HQ Intel on COVID-19 impacts

- Prioritized missions in a Division portfolio should be adjusted to acceptable cost and schedule reserves to accommodate mission-specific COVID impacts. This applies to both PI-led and directed missions
- The programmatic adjustments of all missions within a Division portfolio should be covered without unduly reducing program content
 - Priorities defined by the Decadal Survey
 - Mission timing and cadence may change
- The SMD R&A program shall be protected from flight program COVID impacts as this program has its own challenges that put it under pressure
- It may be necessary to terminate or delay current or planned missions to arrive at such a portfolio solution

HQ Intel on COVID-19 impacts

- The SMD R&A program shall be protected from flight program COVID impacts.
- SMD will focus on missions launching before the end of 2021 ('fly out'), missions in Phase C/D, missions with planetary launch windows, decadal survey missions with highest priority, and coordination of schedules among co-manifested missions.
- If necessary, to accommodate impacts within a portfolio planning budget, SMD will consider delaying the ramp-up of future missions and delaying the start of new missions. No new missions may be initiated without SMD level approval of a portfolio solution accommodating COVID impacts
 - This includes issuing Announcements of Opportunity (AOs), issuing Formulation Authorization Documents (FADs), forming Science and Technology Definition Teams (STDs), making commitments to partners, making Step 1 selections, making Step 2 down-selections

TEMPO
CPF

SD RTOW Project Approval Status

Step 9: Project ATP

- SD-Mission Operations for on-orbit assets
- SD-CLARREO
- SD-MSR EEV (Phase 1)
- SD-ASDC
- SD-Mars 2020 EDL Ops
- SD-SCALPSS
- SD-ACTIVATE

Step 7-8: Center & Mission Directorate Approval (but not scheduled)

- SD-Dragonfly – 14x22

Step 4-6: Plans Under Review

- SD-ACCP HSRL
- SD-MSR EEV (Phase 2)
- SD-Dragonfly – VST

Step 2 & 3: Detailed Project Plan & Preparation

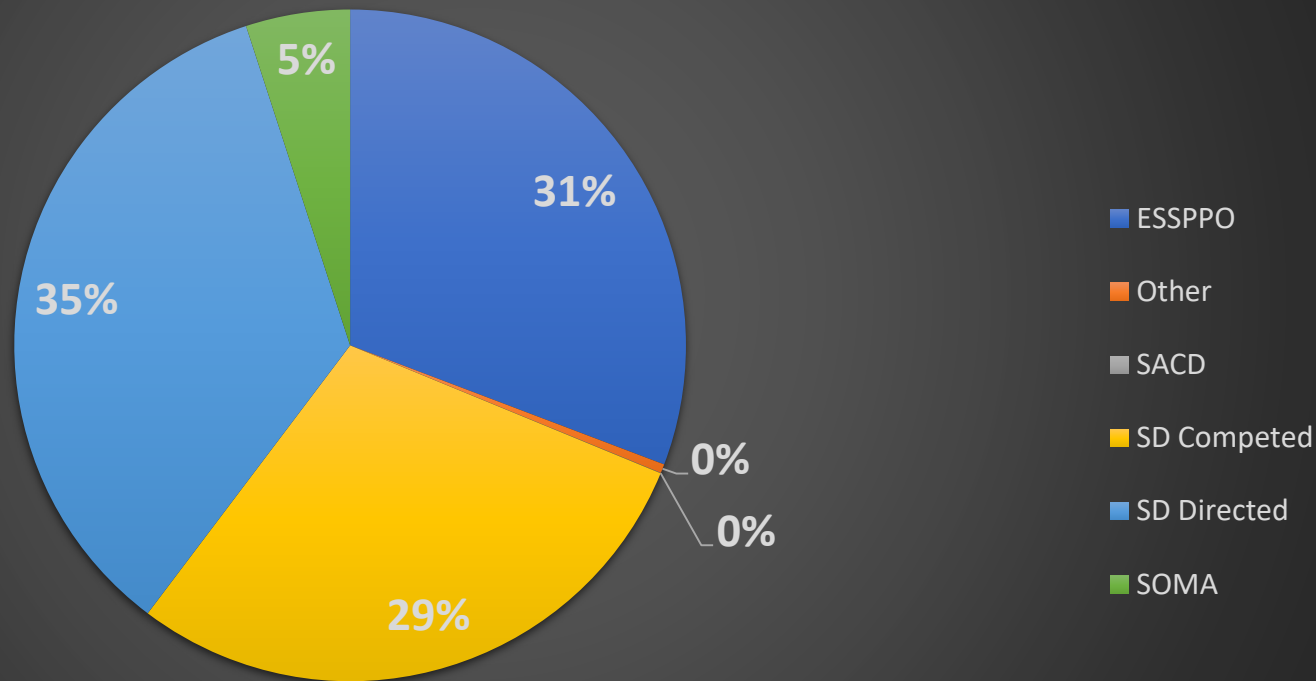
- SD-SAGE IV
- SD-Athena
- SD-ARCSTONE

Step 1: Candidates

- ALL Others

NASA Langley SMD Budget

NASA LaRC PY20 SMD Budget



SMD represents 26% of LaRC's budget in FY20

36% of SMD funding at LaRC represents Agency functions (SOMA and ESSPPO)

Note:

- SMD funding represented ~ 30% of LaRCs budget
- SD Competed = 11%
- SD Directed = 21%

Near Term Opportunities PWin

Near

Competed	PWin	ROI to Center	
EV-M3 (\$150M) OPAL 2 – Likely over the cost cap.	5%	\$60M	
EV-I6 (\$30M). Compact lidar/polarimeter for small sat call. Assume polarimeter is contributed. (Q1 2021)	10% 2021	\$6-9M	#3
Explorer-1 (\$350M). Need to mature Winds SP and PBL related concepts. Facility Class Winds Airborne.	5% 2021	\$100M-150M	?
Earth Venture Suborbital-4. Submit multiple mature concepts. (Q4 2021)	75% 2022	\$10M	#4
SAGE-IV Constellation	50% 2021	\$15M	#2
Directed	PWin	ROI	
ACCP Lidar (\$150M) – Likely to be in Phase II and not Phase I.	Pwin 2024 30%	\$75M	#1
Follow-on to CPF or TEMPO	TBD	TBD	
Add-on for SBG - Arcstone	25%	\$15M	

Other Opportunities: Arcstone, Athena, Etc.

Leads & Opportunities

[illegible]

Science Directorate Annual Report

NASA Langley's Science Directorate has published its first-ever online Annual Report, which highlights our 2019 accomplishments and contributions to NASA, the Nation, and our global partners. The 2019 Science Directorate Annual Report is available online now at:



<https://science-people.larc.nasa.gov/2019-annual-report>