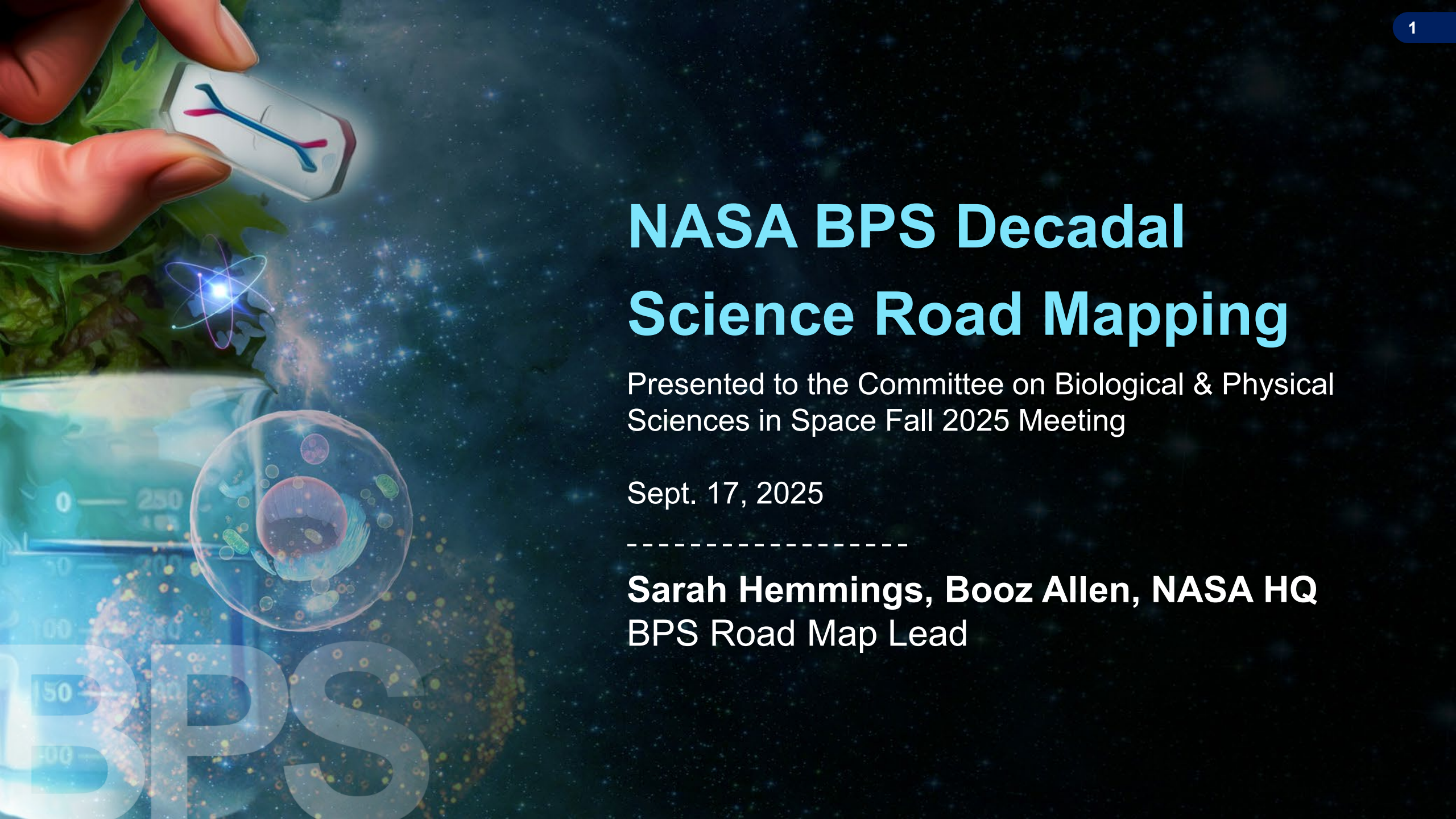




NASA BPS Decadal Science Road Mapping

Presented to the Committee on Biological & Physical
Sciences in Space Fall 2025 Meeting

Sept. 17, 2025

Sarah Hemmings, Booz Allen, NASA HQ
BPS Road Map Lead

BPS Decadal Science Goal Leads



Lynn Harrison, Ph.D., NASA HQ
Precision Health Science Lead



Daniel Walsh, NASA HQ
Foundations Goal Lead (Acting)



Elison Blancaflor, Ph.D., NASA HQ
Space Crops Science Lead

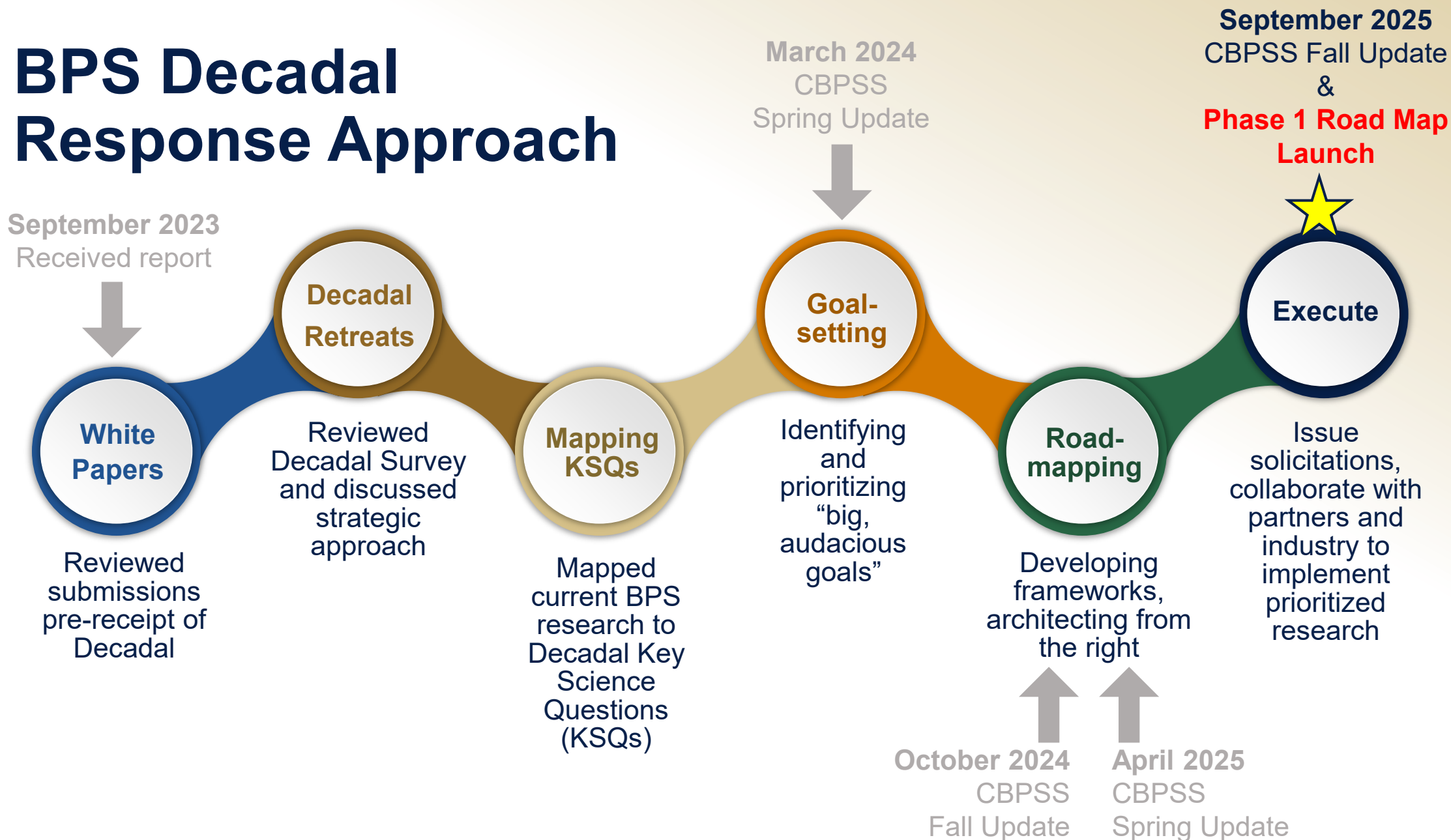


Kevin Sato, Ph.D., NASA HQ
Space Labs Goal Lead



Jason Williams, Ph.D., JPL
Quantum Leaps Science Lead (Acting)

BPS Decadal Response Approach

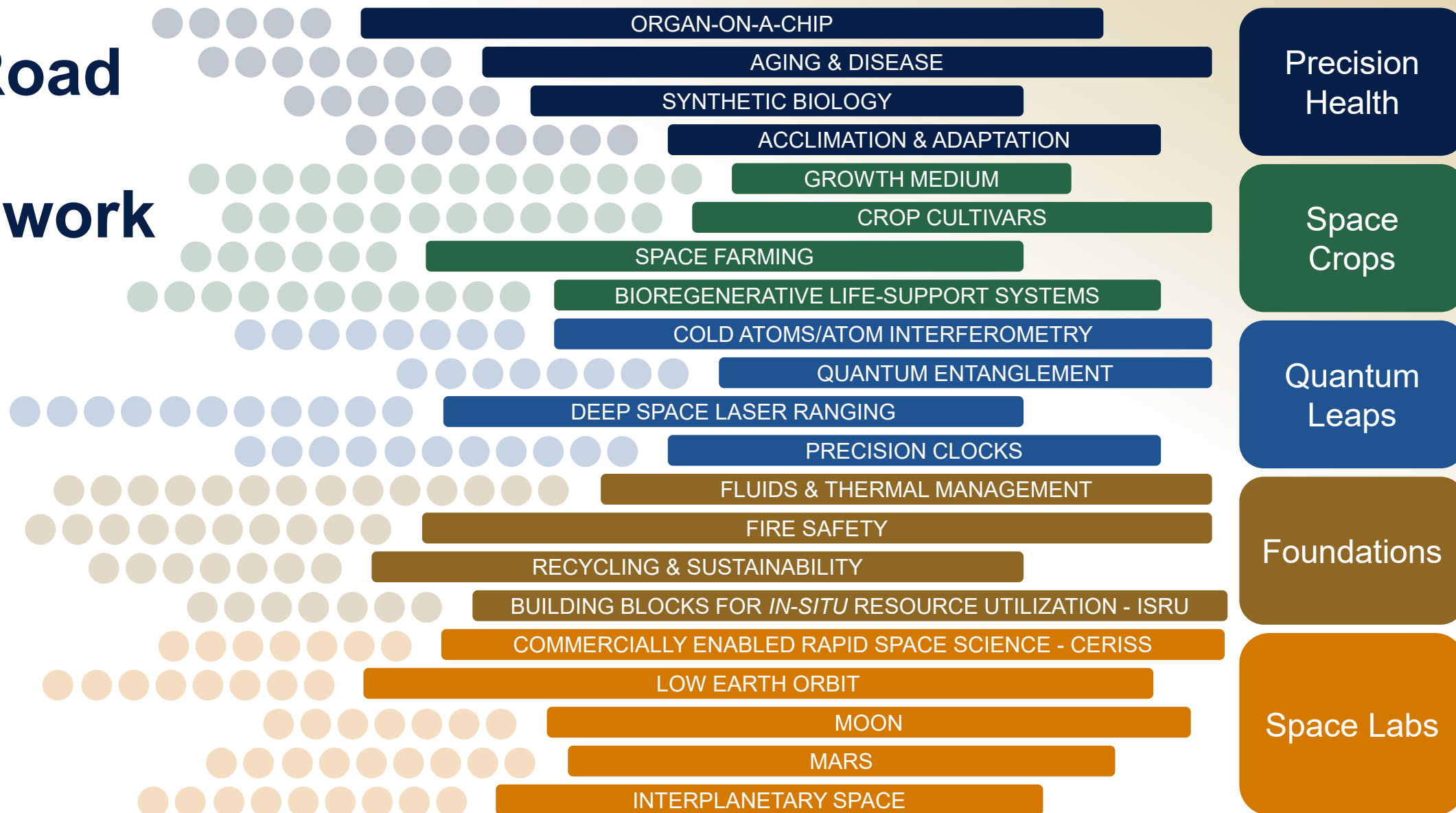


INVESTIGATIONS

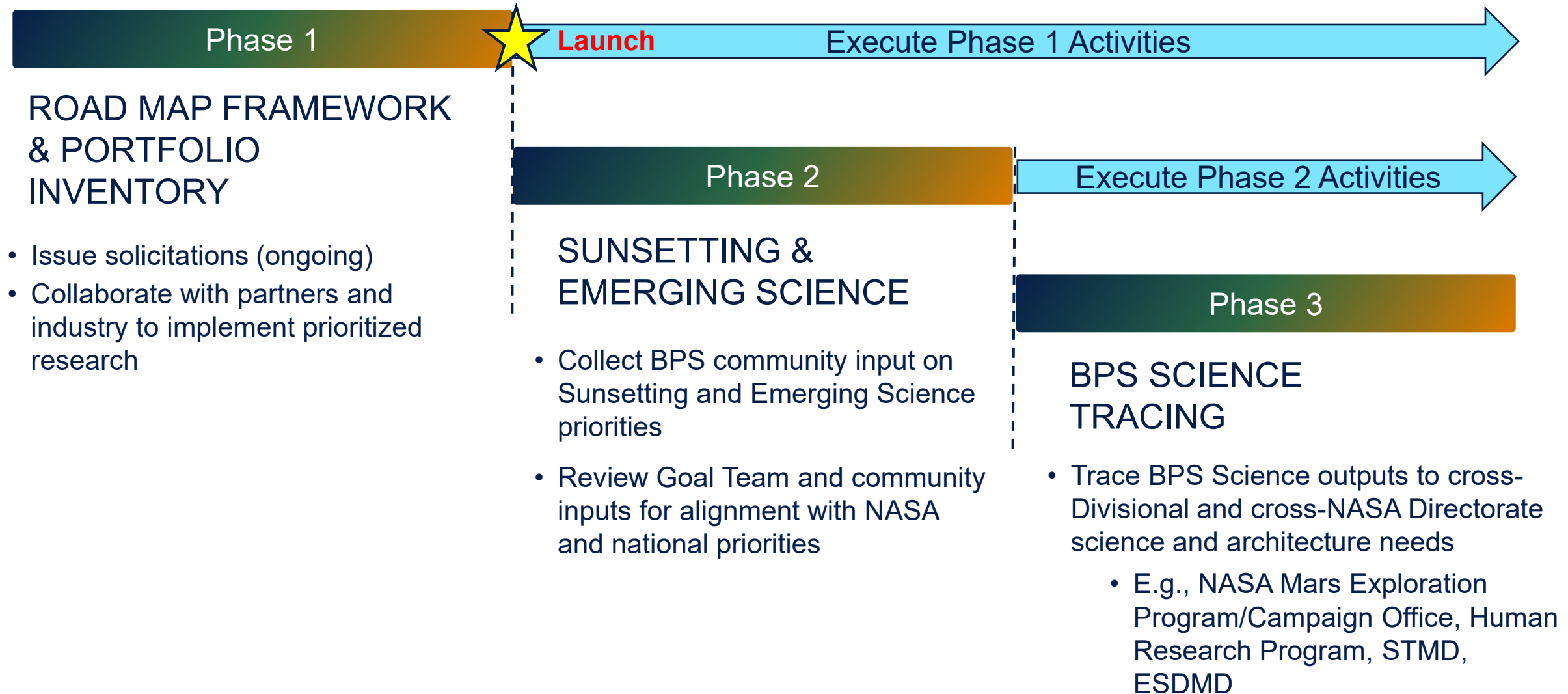
THEMES

GOALS

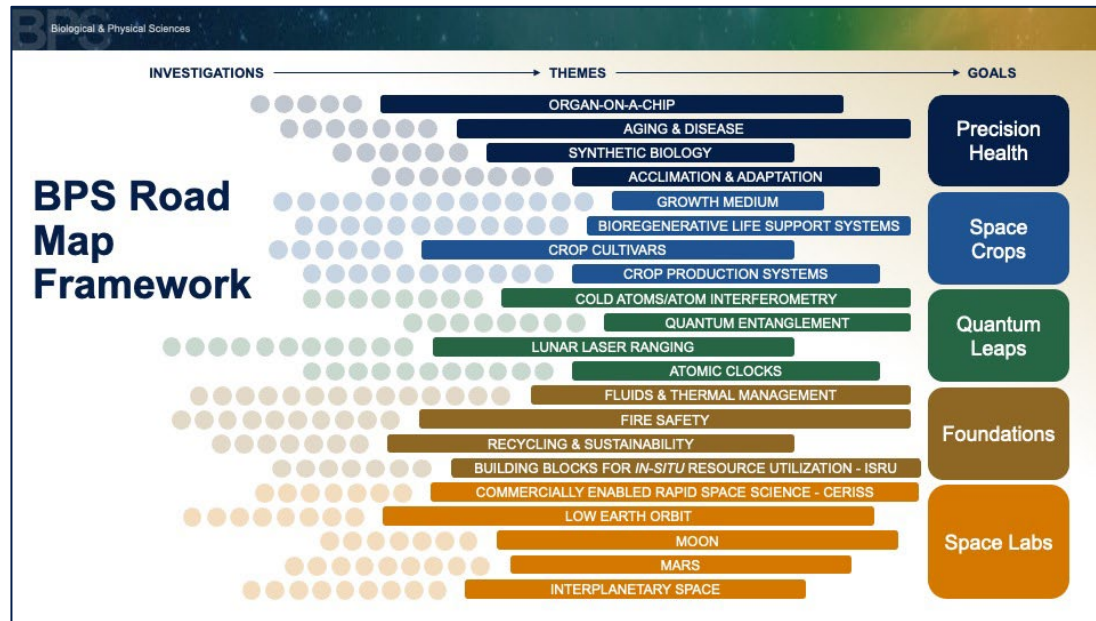
BPS Road Map Framework



BPS Road Map Next Steps



Launching the Framework for Future BPS Science



September 2025

Phase 1 Road Map Launch



Download from the BPS website:

<https://science.nasa.gov/biological-physical/goals/>

Live Demo



Download from the BPS website:

<https://science.nasa.gov/biological-physical/goals/>



National Aeronautics and
Space Administration

NASA BIOLOGICAL AND
PHYSICAL SCIENCES (BPS) DIVISION

Decadal Science Road Map

Sunsetting & Emerging Science: CBPSS Community Input

NASA invites community input on
Sunsetting & Emerging Science
topics until Oct 17, 2025



Instructions for Providing Input

- NASA BPS invites community input on Sunsetting & Emerging Science topics until Oct 17, 2025
 - Download input templates from CBPSS meeting site or <https://science.nasa.gov/092025-2/>
 - Provide input using the templates at the end of this deck
 - Send completed templates (or written feedback in same categories) to: hq-bps-road-map@mail.nasa.gov
 - NASA will review community inputs in October and November, 2025
- Download the interactive BPS Decadal Science Road Map for reference
 - <https://science.nasa.gov/biological-physical/goals/>
 - <https://assets.science.nasa.gov/content/dam/science/bps/bps-general/goals/BPS%20Decadal%20Road%20Map.pdf>

Definitions

Sunsetting

- What science are you involved in that we know enough about and could be sunsetted?
- What have we learned and where do we take it next?

Emerging Science

- What emerging science are you involved with that will play a role in the future of space exploration?
- What is the future of the science?
- With ISS ending, what could we do elsewhere?
 - E.g., ground-based, CLDs, other space destinations, free-flyers, small sats, rideshares

Sunsetting and Emerging Science

Goal	Sunsetting 	Timeframe	Emerging Science 	Space Labs (CERISS, LEO, Moon, Mars, Interplanetary Space) 
Precision Health 	Research on individual systems	1-5 years	- Systems biology - Integrated physiological systems	- LEO - Partial gravity - Interplanetary space
Space Crops 	Gene expression in whole plants (transcriptomics) studies in 1g & ISS microgravity	1 year	- Cell-type specific ‘omics’ in space environments - Genes relevant for Earth-to-Space transitions	- Partial gravity - Suborbital flights
Quantum Leaps 	Cold Atom Lab (CAL)	5 years	Bose-Einstein Condensate and Cold Atom Lab (BECCAL)	LEO
Foundations 	ISS Combustion Integrated Rack	1-3 years	Flammability of Materials on the Moon (FM2)	Partial gravity

Sunsetting and Emerging Science

Precision Health



Sunsetting



Timeframe



Emerging Science



Space Labs
(CERISS, LEO,
Moon, Mars,
Interplanetary Space)



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Sunsetting and Emerging Science

Space Crops

Sunsetting 	Timeframe 	Emerging Science 	Space Labs (CERISS, LEO, Moon, Mars, Interplanetary Space) 
Text goes here	Text goes here	Text goes here	Text goes here

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Sunsetting and Emerging Science

Quantum Leaps

Sunsetting 	Timeframe 	Emerging Science 	Space Labs (CERISS, LEO, Moon, Mars, Interplanetary Space) 
Text goes here	Text goes here	Text goes here	Text goes here

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Sunsetting and Emerging Science

Foundations



Sunsetting



Timeframe



Emerging Science



Space Labs
(CERISS, LEO,
Moon, Mars,
Interplanetary Space)



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NASA BPS invites community input on Sunsetting & Emerging Science topics until Oct 17, 2025. Send completed templates (or written feedback in same categories) to: hq-bps-road-map@mail.nasa.gov.



Download the BPS Road Map:

<https://science.nasa.gov/biological-physical/goals/>

<https://assets.science.nasa.gov/content/dam/science/bps/bps-general/goals/BPS%20Decadal%20Road%20Map.pdf>

Questions/ Comments?

hq-bps-road-map@mail.nasa.gov