

The background of the slide is a composite image. The upper portion shows a deep space scene with a large, detailed Earth's Moon on the left, a smaller reddish planet (Mars) above it, and a small spacecraft with a bright blue engine glow moving towards the right. The lower portion shows a silhouette of a person's head and shoulders on the right, looking out over a landscape under a sunset or sunrise sky with orange and yellow clouds.

EXPLORESPACE TECH
TECHNOLOGY DRIVES EXPLORATION

LEAD Outcome 3

NASA's Space Technology Mission Directorate | Strategic Technology Framework | August 2023

STMD Strategic Framework

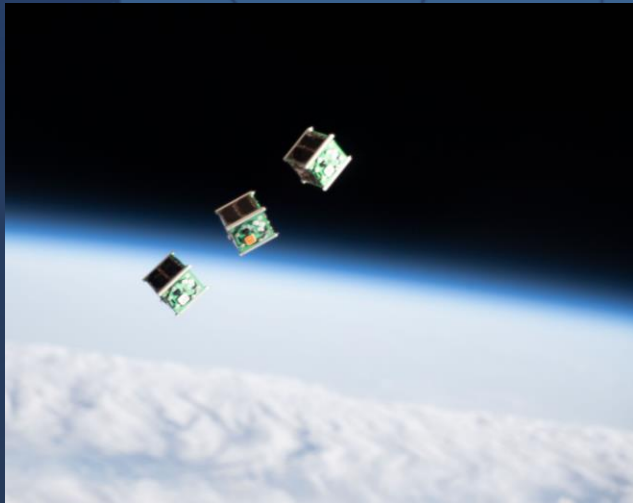
THRUSTS			OUTCOMES	CAPABILITIES
 LEAD Ensuring American global leadership in space technology • Advance US space technology innovation and competitiveness in a global context • Encourage technology driven economic growth with an emphasis on the expanding space economy • Inspire and develop a diverse and powerful US aerospace technology community		GO Rapid, Safe, & Efficient Space Transportation	• Develop nuclear technologies enabling fast in-space transits. • Develop cryogenic storage, transport, and fluid management technologies for surface and in-space applications. • Develop advanced propulsion technologies that enable future science/exploration missions.	• Nuclear Systems • Cryogenic Fluid Management • Advanced Propulsion
		LAND Expanded Access to Diverse Surface Destinations	• Enable Lunar/Mars global access with ~20t payloads to support human missions. • Enable science missions entering/transiting planetary atmospheres and landing on planetary bodies. • Develop technologies to land payloads within 50 meters accuracy and avoid landing hazards.	• Entry, Descent, Landing, & Precision Landing
		LIVE Sustainable Living and Working Farther from Earth	• Develop exploration technologies and enable a vibrant space economy with supporting utilities and commodities • Sustainable power sources and other surface utilities to enable continuous lunar and Mars surface operations. • Scalable ISRU production/utilization capabilities including sustainable commodities on the lunar & Mars surface. • Technologies that enable surviving the extreme lunar and Mars environments. • Autonomous excavation, construction & outfitting capabilities targeting landing pads/structures/habitable buildings utilizing in situ resources. • Enable long duration human exploration missions with Advanced Habitation System technologies.	• Advanced Power • In-Situ Resource Utilization • Advanced Thermal • Advanced Materials, Structures, & Construction • Advanced Habitation Systems
		EXPLORE Transformative Missions and Discoveries	• Develop next generation high performance computing, communications, and navigation. • Develop advanced robotics and spacecraft autonomy technologies to enable and augment science/exploration missions. • Develop technologies supporting emerging space industries, including: Satellite Servicing & Assembly, In Space/Surface Manufacturing, and Small Spacecraft technologies. • Develop vehicle platform technologies supporting new discoveries. • Develop technologies for science instrumentation supporting new discoveries. • Develop transformative technologies that enable future NASA or commercial missions and discoveries	• Advanced Avionics Systems • Advanced Communications & Navigation • Advanced Robotics • Autonomous Systems • Satellite Servicing & Assembly • Advanced Manufacturing • Small Spacecraft • Rendezvous, Proximity Operations & Capture • Sensor & Instrumentation



LEAD

Ensuring American global leadership in space technology

Outcome 3: Inspire and develop a diverse and powerful U.S. aerospace technology community



Make it easier for all U.S. individuals and organizations to contribute to NASA technology development



Increase representation of underrepresented and underserved groups across STMD's portfolio



Cultivate a pipeline of technologists and innovators

Objective 1: Make it easier for all U.S. individuals and organizations to contribute to NASA technology development

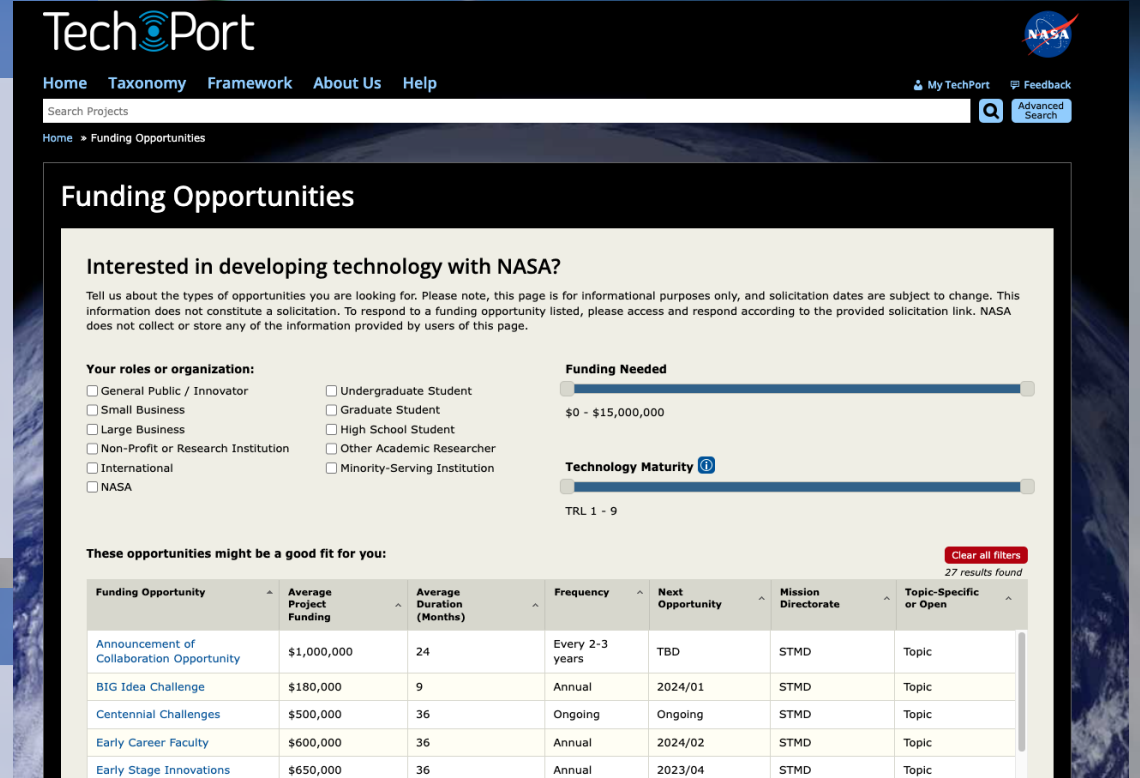
STMD is a technical organization. Internal processes and requirements can introduce unnecessary complexity that gets passed on to potential collaborators during the pre-proposal and proposal process. STMD aims to reduce barriers within its control to benefit all collaborators.

Target Tactics

- ✓ Direct, targeted outreach
- ✓ TechPort funding opportunity search tool:
<https://techport.nasa.gov/opportunities>
- ✓ Diverse early-stage opportunities
- ✓ Varied award mechanisms
- ✓ Enhanced solicitation and proposal review processes*
 - Solicitation proof/review to reduce complexity
 - Step A/B proposals
 - Double anonymous peer review

Sample Metrics

% of first-time STMD proposers
% of first-time STMD awardees



TechPort

Home Taxonomy Framework About Us Help

Search Projects

Home » Funding Opportunities

Funding Opportunities

Interested in developing technology with NASA?

Tell us about the types of opportunities you are looking for. Please note, this page is for informational purposes only, and solicitation dates are subject to change. This information does not constitute a solicitation. To respond to a funding opportunity listed, please access and respond according to the provided solicitation link. NASA does not collect or store any of the information provided by users of this page.

Your roles or organization:

☐ General Public / Innovator ☐ Undergraduate Student

☐ Small Business ☐ Graduate Student

☐ Large Business ☐ High School Student

☐ Non-Profit or Research Institution ☐ Other Academic Researcher

☐ International ☐ Minority-Serving Institution

☐ NASA

Funding Needed

\$0 - \$15,000,000

Technology Maturity 0

TRL 1 - 9

These opportunities might be a good fit for you:

27 results found

Funding Opportunity	Average Project Funding	Average Duration (Months)	Frequency	Next Opportunity	Mission Directorate	Topic-Specific or Open
Announcement of Collaboration Opportunity	\$1,000,000	24	Every 2-3 years	TBD	STMD	Topic
BIG Idea Challenge	\$180,000	9	Annual	2024/01	STMD	Topic
Centennial Challenges	\$500,000	36	Ongoing	Ongoing	STMD	Topic
Early Career Faculty	\$600,000	36	Annual	2024/02	STMD	Topic
Early Stage Innovations	\$650,000	36	Annual	2023/04	STMD	Topic

* Processes may vary from solicitation to solicitation and are subject to change

Objective 2: Increase representation of underrepresented and underserved groups across STMD's portfolio

One of NASA's core values is inclusion. Two Executive Orders (13985; 14035) issued in 2021 direct federal agencies to advance their diversity, equity, inclusion, and accessibility (DEIA) efforts and require NASA to analyze the extent to which policies and programs perpetuate barriers to equal opportunity. Via LEAD outcome 3 and supporting activities, STMD aims to engage different communities, open doors to new opportunities, and support diverse ideas from diverse sources.

Target Tactics

- ✓ Targeted outreach
- ✓ Planning and capacity building grants
- ✓ Partnering with the Office of STEM Engagement's [Minority University Research and Education Project](#)
- ✓ [NASA Innovation Corps \(I-Corps\)](#)
- ✓ [Technology Transfer Expansion](#) Tech Center Research Park Accelerator Network

Sample Metrics

of transitions from developmental solicitations to other opportunities
% of proposals from Minority-Serving Institutions that are selected/awarded

Objective 3: Cultivate a pipeline of technologists and innovators

U.S. industries that rely on a technologically skilled workforce are facing labor shortages that are projected to continue (U.S. Chamber of Commerce Foundation, 2022). STMD supports a strategy to build up the pipeline of people capable of contributing to current and future space technology research, development, and demonstration.

Target Tactics

- ✓ Execute opportunities that attract, grow, and retain NASA workforce talent
- ✓ Foster internal collaboration
- ✓ Foster external talent within universities and small businesses
- ✓ Offer active STEM learning experiences
- ✓ Pursue high-impact STEM engagement projects and partnerships
- ✓ Strategic communications, outreach, and STEM engagement across all programs

Sample Metrics

of interns and early career professionals supporting STMD projects
STMD employee retention rate
Estimate number of students engaged

