

NASA challenge seeks ways to use Mars' natural resources for astronauts

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Living off the land is different when the land is 140 million miles away, so NASA is looking for innovative ideas to use in situ (in place) Martian resources to help establish a human presence on the Red Planet.

The In Situ Resource Utilization Challenge offers the public an opportunity to submit designs for structures on Mars that would use existing material. The agency plans to award \$10,000 to the first-place winner, with \$2,500 each for two second-place submissions.

NASA's Chief Scientist Ellen Stofan announced the challenge at an event Wednesday honoring the five-year anniversary of the government-wide platform Challenge.gov.

"NASA's newest challenge is yet another stellar example of the agency's commitment to harnessing the ingenuity of citizens as we seek to expand the frontiers of knowledge, capability and opportunity in space.

Exploring Mars and other worlds is a herculean endeavor. Like other agencies across the [federal government](#), NASA recognizes that our success will be enhanced greatly by involving people with all kinds of knowledge, skill sets and ideas in our work," said Stofan.

One advantage of using resources from the planet instead of bringing everything from Earth is the potential to save the agency more than \$100,000 per 2.2 pounds (1 kilogram) of cargo each launch.

The challenge is run by NineSigma Inc. as part of the NASA Tournament Lab (NTL). The NTL works across NASA and the federal government to provide crowd-based challenges as a way to solve difficult problems and get work done. It's being conducted in collaboration with Swamp Works, a lab at NASA's Kennedy Space Center in Florida dedicated to finding creative solutions for the problems that come with [deep space exploration](#), including the journey to Mars.

"In situ resource utilization is key to our exploration of the universe," said Robert Mueller, senior technologist at Swamp Works. "We must find ways to make what we need once we are at our destination. For example, the soil on Mars could be used to make modular structural building blocks to make shelters, landing pads and other useful structures. We are looking for creative and novel solutions from all types of people."

More information: For more information about the challenge, and details on how to apply, visit go.nasa.gov/1L4MSP6

For more information about NASA's journey to Mars, visit

www.nasa.gov/topics/journeymars

Provided by NASA

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