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Vascular Tissue Challenge

Media Kit

Challenge Overview

The Vascular Tissue Challenge is a \$500,000 prize purse to be divided among the first three teams who can successfully create thick, human vascularized organ tissue in an in-vitro environment while maintaining metabolic functionality similar to their in vivo native cells throughout a 30 calendar day survival period. NASA's objective for this Challenge is to produce technologies capable of creating viable thick (>1cm) metabolic tissues that can be used to advance research on human physiology, fundamental space biology, and medicine taking place both on the Earth and the ISS National Laboratory. Specifically, technology innovations may enable the growth of de novo tissues and organs on orbit which may address the risks related to traumatic bodily injury, improve general crew health, and enhance crew performance on future, long-duration missions.

Key Components of the Challenge

- >1cm thick human tissues
- Active blood perfusion
- Functioning parenchymal cells
- 30-day trial length
- 3 successful trials
- \$500,000 in awards from NASA
- Up to \$200,000 in supplemental awards from CASIS, plus experiment flight to ISS-NL, and on-station support.

About the New Organ Alliance

The New Organ Alliance is a non-profit initiative fiscally sponsored by the Methuselah Foundation. The Alliance's mission is to bring about the day when new tissues and organs are available for all patients in need. The New Organ Alliance works to increase the support available for researchers to develop the technologies that will get us there. The Alliance was formed in 2013 with the announcement of the \$1,000,000 Liver Prize from the Methuselah Foundation. Since that time the New Organ Alliance has also been pioneering a Roadmapping initiative to identify the pathways and milestones along the way to ending the organ shortage. In 2015, the New Organ Alliance was awarded a grant from the National Science Foundation to launch this roadmap with an industry wide workshop defining key pathways and milestones in each of the major solution spaces toward ending the organ shortage. This roadmap provides the framework upon which the New Organ Alliance and its partners attempt to increase support and funding for researchers in these fields. In 2016, the New Organ Alliance entered into a Space Act Agreement with NASA to launch the second prize in its portfolio – the Vascular Tissue Challenge.



About NASA Centennial Challenges Program

NASA Centennial Challenges were initiated in 2005 to directly engage the public in the process of advanced technology development. The program offers incentive prizes to generate revolutionary solutions to problems of interest to NASA and the nation. The program seeks innovations from diverse and non-traditional sources. Competitors are not supported by government funding and awards are only made to successful teams when the challenges are met.

In keeping with the spirit of the Wright Brothers and other American innovators, the Centennial Challenge prizes are offered to independent inventors including small businesses, student groups and individuals. These independent inventors are sought to generate innovative solutions for technical problems of interest to NASA and the nation and to provide them with the opportunity to stimulate or create new business ventures.

The President's budget request includes \$4 million per year for Centennial Challenges prizes to allow further growth in the scope and range of prize competitions and even greater opportunities for the citizen-inventor to participate in NASA's research and development.

Contacts

All requests for information about prize operations, team registration, or other activities related to the prize or New Organ Alliance should be directed to:

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