

<b>Fiscal Year:</b>	FY 2020	<b>Task Last Updated:</b>	FY 07/23/2020
<b>PI Name:</b>	Langer, Robert Sc.D.		
<b>Project Title:</b>	Just in Time Medications from Gastrointestinal Resident Microbial Systems		
<b>Division Name:</b>	Human Research		
<b>Program/Discipline:</b>			
<b>Program/Discipline--Element/Subdiscipline:</b>	TRISH--TRISH		
<b>Joint Agency Name:</b>		<b>TechPort:</b>	No
<b>Human Research Program Elements:</b>	None		
<b>Human Research Program Risks:</b>	None		
<b>Space Biology Element:</b>	None		
<b>Space Biology Cross-Element Discipline:</b>	None		
<b>Space Biology Special Category:</b>	None		
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<b>Comments:</b>			
<b>Project Type:</b>	GROUND	<b>Solicitation / Funding Source:</b>	2020 TRISH BRASH1901: Translational Research Institute for Space Health (TRISH) Biomedical Research Advances for Space Health
<b>Start Date:</b>	04/01/2020	<b>End Date:</b>	03/31/2022
<b>No. of Post Docs:</b>		<b>No. of PhD Degrees:</b>	
<b>No. of PhD Candidates:</b>		<b>No. of Master' Degrees:</b>	
<b>No. of Master's Candidates:</b>		<b>No. of Bachelor's Degrees:</b>	
<b>No. of Bachelor's Candidates:</b>		<b>Monitoring Center:</b>	TRISH
<b>Contact Monitor:</b>		<b>Contact Phone:</b>	
<b>Contact Email:</b>			
<b>Flight Program:</b>			
<b>Flight Assignment:</b>			
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Traverso, Carlo Ph.D. ( Massachusetts Institute of Technology )		
<b>Grant/Contract No.:</b>	NNX16AO69A-T0504		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			
<b>Task Description:</b>	Genetically engineered microbes (synthetic microbes) represent a promising approach for the space- and resource-efficient production of active pharmaceutical compounds during long-duration space flight. Microbes are already widely used industrially for the fermentation-based production of many high-value compounds from simple feed stocks. Furthermore, it has been proposed that during long-duration space flight microbes could be stored as small starter stocks and cultured to make fuels, food, and pharmaceuticals. Here we propose to develop an ingestible device that can be used for the modular production of medicines on demand via the use of integrated synthetic microbes.		

Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2020.
Bibliography Type:	Description: (Last Updated: 05/19/2020)