

Fiscal Year:	FY 2019	Task Last Updated:	FY 02/04/2019
PI Name:	Kaplan, David L. Ph.D.		
Project Title:	Silk Composite Biomaterials for Shielding Medications in Space		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:	TRISH--TRISH		
Joint Agency Name:		TechPort:	Yes
Human Research Program Elements:	None		
Human Research Program Risks:	None		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Zip Code:	02155	Congressional District:	5
Comments:			
Project Type:	GROUND	Solicitation / Funding Source:	2018 TRA BRASH1801: Translational Research Institute for Space Health (TRISH) Biomedical Research Advances for Space Health
Start Date:	01/01/2019	End Date:	12/31/2020
No. of Post Docs:		No. of PhD Degrees:	
No. of PhD Candidates:		No. of Master' Degrees:	
No. of Master's Candidates:		No. of Bachelor's Degrees:	
No. of Bachelor's Candidates:		Monitoring Center:	TRISH
Contact Monitor:		Contact Phone:	
Contact Email:			
Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Kluge, Jonathan Ph.D. (Trustees of Tufts College)		
Grant/Contract No.:	NNX16AO69A-T0411		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	The goal is to utilize silk protein, an US Food and Drug Administration (FDA) approved protein biomaterial, in composite material formats, to shield and protect a range of medications – addressing topic #5 in Biomedical Research Advances for Space Health (BRASH) 1801 – New materials for shielding medications. We will utilize novel formulations of the silk protein in composite formats with inorganic particles, as both pouch and as part of the material, to demonstrate broad protection of a range of drugs during exposure to environmental extremes using accelerated testing, mechanistic insights and modeling, and functional assessments. The outcome will be new composite material systems that provide broad-ranged protection, a preliminary model for predictive outcomes, and publications.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2019.
Bibliography Type:	Description: (Last Updated: 02/01/2019)