Fiscal Year:	FY 2021	**Task Last Updated:**	FY 12/05/2020
PI Name:	Wood, Scott J. Ph.D.		
Project Title:	Non-Pharmaceutical Motion Sickness Mitigation		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:			
Joint Agency Name:		**TechPort:**	No
Human Research Program Elements:	(1) **HHC**:Human Health Countermeasures		
Human Research Program Risks:	(1) **Sensorimotor**:Risk of Altered Sensorimotor/Vestibular Function Impacting Critical Mission Tasks		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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PI Organization Type:	NASA CENTER	**Phone:**	(281) 483-6329
Organization Name:	NASA Johnson Space Center		
PI Address 1:	2101 NASA Parkway		
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PI Web Page:			
City:	Houston	**State:**	TX
Zip Code:	77058	**Congressional District:**	36
Comments:	NOTE: PI returned to NASA JSC in January 2017. PI was at Azusa Pacific University from August 2013 – January 2017; prior to August 2013, PI was at NASA JSC.		
Project Type:	GROUND	**Solicitation / Funding Source:**	2019 HERO 80JSC019N0001-FLAGSHIP & OMNIBUS: Human Research Program Crew Health. Appendix A&B
Start Date:	10/01/2020	**End Date:**	09/30/2022
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:**	NASA JSC
Contact Monitor:	Stenger, Michael	**Contact Phone:**	281-483-1311
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Flight Program:			
Flight Assignment:	NOTE: End date changed to 9/30/2022 per PI (Ed., 7/7/21)		
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Pradhan, Gaurav Ph.D. (Mayo Clinic Arizona) Reschke, Millard Ph.D. (NASA Johnson Space Center) Stepanek, Jan M.D. (Mayo Clinic Arizona) Cevette, Michael Ph.D. (Mayo Clinic Arizona)		
Grant/Contract No.:	Internal Project		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	The primary objective of our proposal is to develop an alternative treatment for post-flight motion sickness treatment that can effectively manage symptoms without impacting functional performance on critical crew egress tasks. Our project will validate a non-pharmaceutical tool using galvanic vestibular reduction (GVR) for suppressing vestibular function and thereby reducing motion sickness susceptibility. Our first specific aim is to evaluate the effect of timing on the administration of our non-pharmaceutical treatment to motion sickness. To accomplish this research, we will use a repeated measures design to compare motion sickness symptom onset, severity, and recovery across three conditions: administration from the onset of testing, at a midpoint of testing, and placebo control. Our second specific aim is to evaluate the effect of GVR amplitude on functional fitness task performance. We will test this hypothesis by measuring performance on a sensorimotor and cognitive test battery in steps ranging from 0 mA (control) to the level of GVR thought to provide maximal motion sickness protection. The combined deliverable from both specific aims will be to validate the efficacy of GVR when customizing the stimulus level and introducing it following symptom onset and to understand the effects of this non-pharmaceutical approach on crew performance on functional task performance. The ability to treat motion sickness with non-pharmaceutical approaches has the benefit to not only avoid sedative side effects of the medication but also allow for flexibility to turn the treatment on and off without residual effects associated with drug metabolism. Understanding the operational impacts of each device will provide a more informed evidence base for implementing this tool into crew recovery operations.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2021.
Bibliography Type:	Description: (Last Updated: 03/08/2024)