

<b>Fiscal Year:</b>	FY 2015	<b>Task Last Updated:</b>	FY 03/30/2015
<b>PI Name:</b>	Alfano, Candice Ph.D.		
<b>Project Title:</b>	Characterization of Psychological Risk, Overlap with Physical Health, and Associated Performance in Isolated, Confined, Extreme (ICE) Environments		
<b>Division Name:</b>	Human Research		
<b>Program/Discipline:</b>			
<b>Program/Discipline--Element/Subdiscipline:</b>	HUMAN RESEARCH--Behavior and performance		
<b>Joint Agency Name:</b>	<b>TechPort:</b>	No	
<b>Human Research Program Elements:</b>	(1) <b>HFBP</b> :Human Factors & Behavioral Performance (IRP Rev H)		
<b>Human Research Program Risks:</b>	(1) <b>Bmed</b> :Risk of Adverse Behavioral Conditions and Psychiatric Disorders (2) <b>Sleep</b> :Risk of Performance Decrements and Adverse Health Outcomes Resulting from Sleep Loss, Circadian Desynchronization, and Work Overload (IRP Rev F)		
<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>Zip Code:</b>	77204-5022	<b>Congressional District:</b>	18
<b>Comments:</b>			
<b>Project Type:</b>	GROUND	<b>Solicitation:</b>	2013-14 HERO NNJ13ZSA002N-BMED Behavioral Health & Performance
<b>Start Date:</b>	11/13/2014	<b>End Date:</b>	11/12/2017
<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>	NASA JSC
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<b>Flight Program:</b>			
<b>Flight Assignment:</b>			
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Connaboy, Christopher Ph.D. ( University of Houston ) Laughlin, Mitzi Ph.D. ( University of Houston ) Simpson, Richard Ph.D. ( University of Houston ) Deng, Zhigang Ph.D. ( University of Houston ) Zolensky, Michael Ph.D. ( NASA Johnson Space Center )		
<b>Grant/Contract No.:</b>	NNX15AC13G		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	Anecdotal and empirical findings collected in space and other extreme environments continue to highlight the potential for psychological symptoms and conditions to degrade crew performance, increase conflict, and jeopardize mission success. Indeed, 'negative reactions' during periods of isolation, confinement, demanding work schedules, stimulus reduction, separation from loved ones, sleep deprivation, and a host of other stressors are more appropriately viewed as normative rather than pathogenic. Selection methods and countermeasures serve to mitigate some degree of psychological risk, but long-duration space flight will substantially extend exposure to these and other stressors. Previous research documenting psychological symptoms experienced during space flight and in other isolated and confined environments (ICE) provides evidence of a wide range of psychological and behavioral reactions. Unfortunately however, these collective data ultimately serve to raise more questions than answers. Differences in collection methods, types of symptoms/reactions assessed, psychological constructs examined, and timing and duration of measurements limit conclusions that can be drawn from this research. As a result, understanding of the discrete symptoms and conditions most likely to occur during space flight and thus, ability to quantify the magnitude, probability, or consequences of such risk remains inadequate. The current project proposes to address these notable gaps in knowledge via three specific Aims. First, we will conduct extensive scientific literature reviews and interviews with subject matter experts in order to synthesize existing knowledge of the psychological and behavioral symptoms experienced in space and other extreme environments (Aim 1). Our review will directly inform the development of a comprehensive checklist of symptoms to be monitored among 8 separate cohorts (i.e., 4 Antarctic and 4 HERA cohorts) as part of a longitudinal investigation (Aim 2). Symptoms will be examined based on their point/period prevalence, severity, and duration. The checklist will also be administered (repeatedly) in conjunction with the Space Medicine Exploration Medical Condition List (SMEMCL) in order to examine concurrent and sequential overlap between psychological and physical health symptoms as means of clarifying potential etiologies. Finally, our study will extend previous research by exploring relationships among psychological health, sleep loss/dysregulation, biomarkers of stress, and performance-based outcomes (Aim 3). A comprehensive battery of cognitive and performance measures (including a perception-action coupling task) will be administered repeatedly as part of our longitudinal study. These outcomes will inform a final list of psychological/ behavioral symptoms to be examined during an extended International Space Station (ISS) mission.
<b>Rationale for HRP Directed Research:</b>	
<b>Research Impact/Earth Benefits:</b>	0
<b>Task Progress:</b>	New project for FY2015.
<b>Bibliography Type:</b>	Description: (Last Updated: 04/30/2020)