Fiscal Year:	FY 2017	Task Last Updated:	FY 01/03/2017
PI Name:	Rosen, Michael Ph.D.		
Project Title:	Developing and Validating Sensor-based Measurement Strategies for Team Member Selection		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline Element/Subdiscipline:	HUMAN RESEARCHBehavior a	and performance	
Joint Agency Name:		TechPort:	No
Human Research Program Elements:	(1) HFBP:Human Factors & Behav	vioral Performance (IRP R	ev H)
Human Research Program Risks:	 (1) BMed:Risk of Adverse Cognitive or Behavioral Conditions and Psychiatric Disorders (2) Team:Risk of Performance and Behavioral Health Decrements Due to Inadequate Cooperation, Coordination, Communication, and Psychosocial Adaptation within a Team 		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
PI Email:	mrosen44@jhmi.edu	Fax:	FY
PI Organization Type:	UNIVERSITY	Phone:	407-620-1399
Organization Name:	Johns Hopkins University		
PI Address 1:	750 E Pratt St, 15th Floor		
PI Address 2:	Armstrong Institute for Patient Safety and Quality		
PI Web Page:			
City:	Baltimore	State:	MD
Zip Code:	21202-3142	Congressional District:	7
Comments:			
Project Type:	Ground	Solicitation / Funding Source:	2014-15 HERO NNJ14ZSA001N-MIXEDTOPICS. Appendix E: Behavioral Health & Human Health Countermeasures Topics
Start Date:	12/01/2016	End Date:	11/30/2019
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:	Williams, Thomas	Contact Phone:	281-483-8773
Contact Email:	thomas.j.will1@nasa.gov		
Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Dietz, Aaron Ph.D. (Johns Hopkins University) Lee, Nam Ph.D. (Johns Hopkins University) Oswald, Fred Ph.D. (Rice University) Sapirstein, Adam M.D. (Johns Hopkins University) Wick, Elizabeth M.D. (Johns Hopkins University) Salas, Eduardo Ph.D. (Rice University)		
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Performance Goal No.:			
Performance Goal Text:			

Task Description:	Including the need to define and select candidates based on a new set of behavioral competencies underpinning effective performance in these extended and isolated missions. Additionally, an effective selection system will require new measurement methods capable of discriminating between individuals in a population already exhibiting extreme range restriction. Sensor-based, sociometric, and more generally, unobtrusive measurement methods. The proposed work seeks to oal for addressing these needs and complementing existing competency assessment methods. We will leverage our team's extensive, transdisciplinary experience in signal processing and analysis of complex dynamic network data, psychometrics, performance assessment, and developing theory and strategies for LDSE team improvement to: (1) generate predictive validity evidence for LDSE behavioral competencies, (2) develops ociometric indices of those competencies and provide evidence of their validity, (3) develop an open architecture system for integrating sensor-based measurement systems and extracting sociometric indices, and (4) generating guidelines for the use of sociometric measures in the selection process. Our technical approach for achieving these aims involves metric development, metric validation, assessment architecture system design, and selection guideline development. First, metric development will involve updating our current literature review of unobtrusive measurement to incorporate findings from recent NASA efforts. We will also apply reactive systems modeling to systematically map sensor-based measurement system requirements with potential metrics for assessment. Next, we will conduct exploratory human in the loop analyses to identify additional candidate measures using tensor-decomposition methods of archival data to detect performance patterns. Metric validation will occur in a LDSE analog (HERAHuman Exploration Research Analog) as well as two clinical residency programs in order to increase the sample size needed for analysis. Specif
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2017.
Bibliography Type:	Description: (Last Updated: 11/25/2023)