Fiscal Year:	FY 2013	**Task Last Updated:**	FY 10/23/2012
PI Name:	Roma, Peter Ph.D.		
Project Title:	Development of an Objective Behavioral Assay of Cohesion to Enhance Composition, Task Performance, and Psychosocial Adaptation in Long-Term Work Groups		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Behavior and performance		
Joint Agency Name:		**TechPort:**	Yes
Human Research Program Elements:	(1) **BHP**:Behavioral Health & Performance (archival in 2017)		
Human Research Program Risks:	(1) **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:	pete.roma@nasa.gov	**Fax:**	FY
PI Organization Type:	NASA CENTER	**Phone:**	
Organization Name:	KBR/NASA Johnson Space Center		
PI Address 1:	Behavioral Health & Performance Laboratory		
PI Address 2:	2101 NASA Parkway		
PI Web Page:			
City:	Houston	**State:**	TX
Zip Code:	77058	**Congressional District:**	36
Comments:			
Project Type:	GROUND	**Solicitation / Funding Source:**	2011 Crew Health NNJ11ZSA002NA
Start Date:	10/10/2012	**End Date:**	10/09/2015
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:	Leveton, Lauren	**Contact Phone:**	
Contact Email:	lauren.b.leveton@nasa5.gov		
Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Hursh, Steven (Institute for Behavior Resources, Inc.)		
Grant/Contract No.:	NNX13AB39G		
Performance Goal No.:			
Performance Goal Text:			
	The long-term goal of the proposed research is to deliver a software tool (currently referred to by its working title of "Team Performance Task" or TPT) that will allow long-duration exploration crews to autonomously derive objective, standardized, and quantifiable measures on social dynamics while serving as a decision-aid tool in astronaut selection and multinational crew composition. The TPT is a unique assessment and tracking tool because it is simple, rapid, and operationally feasible like a questionnaire, but is entirely objective, and is innovative in that it requires a group-level demonstration of social dynamics rather than relying on individual opinions and is language-independent, thus making it suitable for cross-cultural applications. Such an empirically validated and operationally feasible software deliverable will contribute to an overall risk mitigation strategy comprised of quantitative, qualitative, objective, and subjective training and monitoring technologies.		

Task Description:	To accomplish this, we propose ground-based experiments to systematically investigate the effects of group composition (gender and personality) on voluntary cooperative propensity in 3-person groups. We also propose to investigate the effects of group composition on performance, task cohesion, social cohesion, and biopsychosocial adaptation in mixed-gender "crews" participating in a long-term simulated space exploration task. These studies would coincide with parallel development of next-generation TPT software to advance the technology beyond our current prototype used for proof-of-concept/validation research into a broadly applicable tool with cross-platform networking and connectivity, enhanced usability/human factors features, extensive parameter manipulation/flexibility to maximize sensitivity, and integrated data collection, archiving, and visualization capabilities. The proposed project will elucidate the influences of personality, gender, behavior, and neurobiology at the individual and group levels while yielding powerful experimental insights on the relationships between group composition, mission performance, task cohesion, social cohesion, and psychosocial adaptation in long-term work groups. The work will provide a scientifically validated TPT concept translated into a flexible and operationally acceptable software tool suitable for future studies of predictive validity and/or countermeasure potential in mission-oriented analog populations and/or high-risk operational and long-duration space analog environments. This work will contribute to the empirical knowledge base used to inform the processes of crew selection, composition, training, monitoring, and maintenance, and will ultimately yield a broadly applicable software tool to help mitigate risks and maximize behavioral health and performance for long-duration space exploration.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2013.
Bibliography Type:	Description: (Last Updated: 07/05/2023)