Fiscal Year:	FY 2013	**Task Last Updated:**	FY 07/11/2013
PI Name:	Salas, Eduardo Ph.D.		
Project Title:	Using Real-Time Lexical Indicators to Detect Performance Decrements in Spaceflight Teams: A Methodology to Dynamically Monitor Cognitive, Emotional, and Social Mechanisms that Influence Performance		
Division Name:	Human Research		
Program/Discipline:	NSBRI		
Program/Discipline--Element/Subdiscipline:	NSBRI--Neurobehavioral and Psychosocial Factors Team		
Joint Agency Name:		**TechPort:**	Yes
Human Research Program Elements:	(1) **HFBP**:Human Factors & Behavioral Performance (IRP Rev 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:	eduardo.salas@rice.edu	**Fax:**	FY
PI Organization Type:	UNIVERSITY	**Phone:**	713-348-3917
Organization Name:	Rice University		
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PI Address 2:	6100 Main Street MS25		
PI Web Page:			
City:	Houston	**State:**	TX
Zip Code:	77005	**Congressional District:**	7
Comments:	NOTE: Previous affiliation was University of Central Florida, until mid-2015		
Project Type:	GROUND	**Solicitation / Funding Source:**	2012 Crew Health NNJ12ZSA002N
Start Date:	08/01/2013	**End Date:**	07/31/2016
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:**	NSBRI
Contact Monitor:		**Contact Phone:**	
Contact Email:			
Flight Program:			
Flight Assignment:	NOTE: End date is now 7/31/2016 (previously 11/30/2014) per NSBRI (Ed., 12/8/14) NOTE: End date is now 11/30/2014 per NSBRI (Ed., 7/15/14)		
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Driskell, James (Florida Maxima Corporation)		
Grant/Contract No.:	NCC 9-58-NBPF03402		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	Specific aims of this project are twofold: (1) develop a methodology to assess cognitive and emotional state “at a distance” through spontaneous verbal output in real-time communications and (2) produce a real-time assessment tool to detect cognitive performance deficits, stress, fatigue, anxiety, and depression in the spaceflight operational setting. The specific project aims meet the NSBRI Neurobehavioral and Psychosocial Factors Team (NSBRI- NBPF) call for refining “entirely non-obtrusive objective means of detecting and mitigating cognitive performance deficits, stress, fatigue, anxiety and depression for the operational setting of spaceflight.” Primary tasks for the first year include: (1) the development of a working model of cognitive performance deficits, stress, fatigue and anxiety in spaceflight and (2) the generation of a lexicon (in American English) indicative of these constructs. Second and third years of the project will focus on the validation of the lexical methodology through a multi-level empirical research. The primary tasks include: (1) validation via archival analysis of previously collected data, (2) validation studies conducted with representative and analogue populations, and (3) delivery of a transparent system which allows for real-time assessment and graphical display of stress processes drawn from ongoing verbal or textual communications. These tasks will afford an investigation of the topography of shifts in lexicon word use over the course of individual and team performance, examine lexicon word use to gauge stress effects, cognitive load, anxiety, etc., and predict individual and team performance outcomes. Overall, this multi-level approach will provide comprehensive, evidence-based guidance to NSBRI- NBPF addressing the need for refining “entirely non-obtrusive objective means of detecting and mitigating cognitive performance deficits, stress, fatigue, anxiety and depression for the operational setting of spaceflight.”
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2013.
Bibliography Type:	Description: (Last Updated: 09/04/2023)