

Fiscal Year:	FY 2014	Task Last Updated:	FY 10/17/2014
PI Name:	Robinson, Stephen K. Ph.D.		
Project Title:	Customized Refresher and Just-in-Time Training for Long-Duration Spaceflight Crews		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:	NSBRI--Human Factors and Performance Team		
Joint Agency Name:	TechPort:	No	
Human Research Program Elements:	(1) HFBP :Human Factors & Behavioral Performance (IRP Rev H)		
Human Research Program Risks:	(1) HSIA :Risk of Adverse Outcomes Due to Inadequate Human Systems Integration Architecture		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Zip Code:	95616-5270	Congressional District:	3
Comments:			
Project Type:	GROUND	Solicitation / Funding Source:	2013 HERO NNJ13ZSA002N-Crew Health (FLAGSHIP & NSBRI)
Start Date:	06/01/2014	End Date:	05/31/2017
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:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Byrne, Vickie M.S. (Lockheed Martin) Liu, Andrew Ph.D. (Massachusetts Institute of Technology) Mindock, Jennifer Ph.D. (Wyle Laboratories, Inc.) Oman, Charles Ph.D. (Massachusetts Institute of Technology)		
Grant/Contract No.:	NCC 9-58-HFP03801		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	<p>Project Goals:</p> <p>Our overall objective is to develop novel, context-sensitive, and customized onboard training techniques that can be adapted to different tasks and crewmembers, with ability to address both refresher training (for re-acquisition of expert performance) and just-in-time training (for tasks that have not been specifically trained previously, but require the integration of existing astronaut skills). To achieve this objective, we propose to test the hypothesis that multimedia training which is customized for the crewmember can be more efficient than traditional, generic format training for the same measured effectiveness.</p>
	<p>The project will begin with the development of two tasks that represent typical complex and critical activities that are carried out by astronauts in space relatively infrequently. We will develop a set of training materials that follow the NASA style of briefings, procedures and hands-on practice. Once these tasks are developed, we will conduct an experiment with human subjects to determine if customized, self-made video training materials prove to be better refresher training materials than the generic materials that would typically be used by crewmembers. Subjects will receive initial training and their baseline performance evaluated. After a period of about 6 months, subjects will return to the lab, review the refresher training materials, and be re-evaluated on how well they have retained or re-acquired their task skills. A second experiment will be conducted using the same two representative tasks, but will examine if the customized training materials developed in the first experiment could be used as “just-in-time” training materials for a new group of subjects with basic training, but no specific training in the given task. In both experiments, we also examine the correlation of subject learning styles with the content of the training materials, to determine whether learning style is a useful characterization for developing customized content. The results of this research project will provide operational guidelines and pedagogy for developing customized video training for astronauts on long-duration mission beyond Earth orbit.</p>
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2014.
Bibliography Type:	Description: (Last Updated: 01/29/2024)