

<b>Fiscal Year:</b>	FY 2017	<b>Task Last Updated:</b>	FY 07/05/2017
<b>PI Name:</b>	Burke, Shawn Ph.D.		
<b>Project Title:</b>	Facilitating the Synergistic Side of Cultural Diversity in LDSE: Identification of Challenges and Development of Cultural Training		
<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>HSIA</b> :Risk of Adverse Outcomes Due to Inadequate Human Systems Integration Architecture (2) <b>Team</b> :Risk of Performance and Behavioral Health Decrements Due to Inadequate Cooperation, Coordination, Communication, and Psychosocial Adaptation within a Team		
<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>	32826-3281	<b>Congressional District:</b>	7
<b>Comments:</b>			
<b>Project Type:</b>	GROUND	<b>Solicitation / Funding Source:</b>	2014-15 HERO NNJ14ZSA001N-MIXEDTOPICS. Appendix E: Behavioral Health & Human Health Countermeasures Topics
<b>Start Date:</b>	08/22/2016	<b>End Date:</b>	08/21/2020
<b>No. of Post Docs:</b>	0	<b>No. of PhD Degrees:</b>	0
<b>No. of PhD Candidates:</b>	2	<b>No. of Master' Degrees:</b>	0
<b>No. of Master's Candidates:</b>	0	<b>No. of Bachelor's Degrees:</b>	0
<b>No. of Bachelor's Candidates:</b>	0	<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>	July 2017 report: No key personnel changes.		
<b>COI Name (Institution):</b>	Salas, Eduardo Ph.D. ( Rice University )		
<b>Grant/Contract No.:</b>	NNX16AP96G		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	<p>Culture has been a factor for space exploration since the mid 1970s when the U.S. first partnered with Russia. Work has indicated that culturally-based differences in values, beliefs, and preferences for cognition and action can have an impact on interdependent action (Stahl et al. , 2010). Cultural diversity can pose challenges for a number of transition, action, and interpersonal processes and emergent states in teams. However, almost all of this work has been conducted outside the context of spaceflight. The little work that has been conducted within spaceflight has begun to suggest that the impact of culture on teams may be different in long-duration space exploration (LDSE--see Suedfeld et al., 2013). This drives the question as to whether cultural diversity within spaceflight crews has the same impact on team performance as that reported within the wider literature on cross-cultural teams and what can be done to create synergy. We leverage prior work on cultural diversity and teams in mission critical environments and archival data on team interaction in ICE (isolated, confined environments) and pair this with experimentation in ground analog studies to better understand the critical challenges created by cultural diversity in LDSE and use this information to create and test cultural training tools that can be used pre- and in-flight. Specifically, we take a multi-pronged approach to answer the following questions: (1) what are the critical issues surround culture and team performance in LDSE, (2) from a compositional standpoint is there an 'ideal' team profile in terms of cultural orientations to facilitate team performance and adaptability in LDSE, (3) what types of cultural training can be developed for use pre-flight and in-flight, and (4) what tools can be developed to facilitate practitioners in maximizing the potential synergy in culturally diverse teams operating in LDSE (e.g., pillars, guidelines, practices, tips).</p> <p>Stahl, G.K., Makela, K., Zander, L., &amp; Maznevski, M.L. (2010 a ). A look at the bright side of multicultural team diversity. <i>Scandinavian Journal of Management</i>, 26 (4), 439 - 447.</p> <p>Stahl, G. K., Maznevski, M. L., Voigt, A., &amp; Jonsen, K. (2010b). Unraveling the effects of cultural diversity in teams: A meta - analysis of research on multicultural work groups. <i>Journal of international business studies</i> , 41 (4), 690 - 709.</p> <p>Suedfeld, P., Wilk, K. E., &amp; Cassel, L. (2013). Flying with strangers: postmission reflections of multinational space crews (pp. 185-209). Springer, Berlin Heidelberg.</p>
<b>Rationale for HRP Directed Research:</b>	
<b>Research Impact/Earth Benefits:</b>	<p>Within this project, we seek to answer the following questions: (1) what are the critical issues surrounding culture and team performance in long duration spaceflight, (2) is there a team cultural profile that facilitates team performance and adaptation in long duration spaceflight, and (3) what tools can be developed to facilitate synergy/mitigate decrements in teamwork and team performance within culturally diverse teams operating in the context of spaceflight. The proposed project will impact numerous areas. First, this research will address current theoretical gaps surrounding the critical challenge of cultural diversity in long duration spaceflight (both on the ground and in orbit). This information is then used to build a series of complementary, modular training tools to facilitate the crew's ability to turn cultural diversity into a synergistic force. The existent literature on cross-cultural training does little to focus on cultural diversity in crews operating in isolated, confined environments. Additionally, the focus of most cross-cultural training programs is to prepare expatriates to go abroad; therefore, teaching cross-cultural competence with regard to teamwork skills is rarely seen. In building our training we seek to validate the effectiveness of such programs within analog environments using sound scientific methods and training evaluation techniques. Finally, as an important part of training development is the assessment of the skills gained during training we will also deliver a set of assessment tools that can be used to diagnose cross-cultural competence levels with regard to team interaction.</p>
<b>Task Progress:</b>	<p>Efforts within the current reporting period primarily focused on moving through the definitional phase of the grant whereby the purpose was twofold: 1) to address comments that came up during the review of the original proposal, and 2) to further delineate the experimental activities within the grant so that an analog suited to conducting the experimentation could be identified. In working through this process, our team not only consulted the literature, websites, and archival documentation, but also worked with the flight and ground analog teams to refine the methodology, procedures, and measures such that an initial NASA analog could be identified to support experimentation. This along with supplemental analog samples that can be mapped back onto portions of the defining features of long duration spaceflight will provide us with more robust results than either setting alone. The results of the definitional phase culminated in a revised statement of work that was submitted and reviewed by NASA. The approval of this document, in turn, has recently resulted in permission to move beyond the definitional phase. We look forward to embarking on the work within this grant.</p>
<b>Bibliography Type:</b>	Description: (Last Updated: 09/04/2023)