Fiscal Year:	FY 2013	**Task Last Updated:**	FY 02/05/2014
PI Name:	Feltz, Deborah L. Ph.D.		
Project Title:	Cyber Partners: Harnessing Group Dynamics to Boost Motivation for More Efficient Exercise		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:	NSBRI--Musculoskeletal Alterations Team		
Joint Agency Name:		**TechPort:**	Yes
Human Research Program Elements:	(1) **BHP**:Behavioral Health & Performance (archival in 2017)		
Human Research Program Risks:	(1) **Aerobic**:Risk of Reduced Physical Performance Capabilities Due to Reduced Aerobic Capacity (2) **BMed**:Risk of Adverse Cognitive or Behavioral Conditions and Psychiatric Disorders		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Zip Code:	48824-3711	**Congressional District:**	8
Comments:			
Project Type:	Ground	**Solicitation / Funding Source:**	2012 Crew Health NNJ12ZSA002N
Start Date:	06/01/2013	**End Date:**	05/30/2016
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:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Kerr, Norbert (Michigan State University) Pivarnik, James (Michigan State University) Ploutz-Snyder, Lori (Universities Space Research Association) Winn, Brian (Self)		
Grant/Contract No.:	NCC 9-58-MA03401		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	Astronauts may have difficulty adhering to exercise regimens at vigorous intensity levels during long space missions. Keeping up with exercise prescriptions is important for aerobic and musculoskeletal health during space missions and afterwards. A key impediment to maintaining intense levels of exercise is motivation. However, finding ways to motivate astronauts to be physically active at the levels necessary to lessen the effects of bone and muscle loss and aerobic capacity has not been explored. Typically individuals become bored with training regimens over time or find them less enjoyable if they do not have strategies to maintain their motivation. Although traditional group exercise leads to higher exercise adherence than individual exercise programs, structured group exercise programs are not possible for astronauts during space missions. Moreover, prior models of group exercise have rarely if ever introduced any real interdependence between exercisers, which have been shown to be powerful motivators for continued effort. Exercise video games have been marketed as a way to increase people's motivation and enjoyment to exercise by being entertaining, engaging and providing a means by which to interact with other players. Although many exercise games involve competition among players, few take advantage of group dynamics to motivate play and there has been little attempt to analyze what game features and interpersonal interactions would best motivate users to continue exercising with these games. Using individuals closely matched in age and fitness to current astronauts, our research is designed to determine whether recently documented motivation gains in task groups (dyads in particular) can be harnessed to improve motivation in interactive exercise games using virtual, software-generated (SG) partners. Exercising with an SG partner offers a number of advantages (e.g., availability, flexibility, autonomy) over a live human partner. The specific aims of the proposed project are to 1) Develop the software to create SG exercise partners to interface with the exercise equipment; 2) Test various design features of the SG partner within designed exercise games to determine the most effective features for enhancing motivation to exercise, enjoyment, confidence, and social connectedness; and 3) Test whether exercising over an extended time period with an SG partner, compared to exercising alone, results in better aerobic capacity and muscle strength, adherence to the exercise regimen, and enhanced enjoyment in the activity, maintenance efficacy beliefs, and sense of social connectedness.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2013.
Bibliography Type:	Description: (Last Updated: 02/11/2021)