Fiscal Year:	FY 2008	**Task Last Updated:**	FY 06/02/2008
PI Name:	Dulchavsky, Scott A. M.D., Ph.D.		
Project Title:	Bracelet Investigation		
Division Name:	Human Research		
Program/Discipline:	NSBRI		
Program/Discipline--Element/Subdiscipline:	NSBRI--Smart Medical Systems and Technology Team		
Joint Agency Name:		**TechPort:**	No
Human Research Program Elements:	(1) **HHC**:Human Health Countermeasures		
Human Research Program Risks:	(1) **Cardiovascular**:Risk of Cardiovascular Adaptations Contributing to Adverse Mission Performance and Health Outcomes		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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PI Organization Type:	PUBLIC SERVICE	**Phone:**	313 916 9306
Organization Name:	Henry Ford Health System		
PI Address 1:	Surgery		
PI Address 2:	2799 W. Grand Boulevard, CFP-1		
PI Web Page:			
City:	Detroit	**State:**	MI
Zip Code:	48202-2608	**Congressional District:**	13
Comments:			
Project Type:	GROUND	**Solicitation / Funding Source:**	2007 Crew Health NNJ07ZSA002N
Start Date:	07/01/2008	**End Date:**	06/30/2011
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):	Hamilton, Douglas (Wyle Laboratories) Ebert, Douglas (Wyle Laboratories) Sargsyan, Ashot Ernest (Wyle Laboratories)		
Grant/Contract No.:	NCC 9-58-SMST01602		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	This project will provide information on crew health and performance risks, develop countermeasures, and develop technologies with strategies for monitoring and mitigating crew health. The objectives of this study are to validate just-in-time training methodologies for cardiovascular ultrasound imaging during long-duration spaceflight and to quantify the effects of the Bracelet device on the cardiovascular system in ground-based and flight experiments. The ultrasonic diagnostic investigations in this project will provide a clinically-relevant, increased understanding of cardiovascular physiology as well as significant advances in space medical capabilities to facilitate exploration-class space missions. The research investigations will use a tiered methodology: 1. Ground-based investigations at NASA Johnson Space Center Evaluation of the cardiovascular effects of the Bracelet device with ultrasound, and ultrasound optimization of the Bracelet device application. 2. Simulated microgravity investigations at NASA Johnson Space Center Human factors optimization of stress cardiovascular ultrasound examination, physiologic effects of simulated microgravity on cardiovascular performance, and effects of the Bracelet device on cardiac function in bed-rest subjects. 3. Optimization of just-in-time training methodologies to allow non-expert operators to perform vascular and cardiac ultrasound evaluations at Henry Ford Hospital Develop rapid, hands-on methodologies in vascular and cardiac ultrasound, development and optimization of CD-ROM-based training methods in ultrasonography, and comparison of the accuracy of expert versus just-in-time-trained ultrasound operators performing vascular and cardiac ultrasound. 4. Flight experiments on the International Space Station Evaluation of long-duration spaceflight on cardiovascular function, and evaluation of the physiologic effects of the Bracelet device on cardiovascular function during long-duration spaceflight.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2008.
Bibliography Type:	Description: (Last Updated: 02/23/2023)