Fiscal Year:	FY 2015	**Task Last Updated:**	FY 11/20/2014
PI Name:	Ploutz-Snyder, Lori L. Ph.D.		
Project Title:	Exploring the Relationship between In-flight Training Load Data and Musculoskeletal Health Outcomes		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Biomedical countermeasures		
Joint Agency Name:		**TechPort:**	No
Human Research Program Elements:	(1) **HHC**:Human Health Countermeasures		
Human Research Program Risks:	(1) **Muscle**:Risk of Impaired Performance Due to Reduced Muscle Size, Strength and Endurance		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
PI Email:	lorips@umich.edu	**Fax:**	FY
PI Organization Type:	UNIVERSITY	**Phone:**	(734) 764-5210
Organization Name:	University of Michigan		
PI Address 1:	OBL 4170, 1402 Washington Hts.		
PI Address 2:	School of Kinesiology		
PI Web Page:			
City:	Ann Arbor	**State:**	MI
Zip Code:	48109-2013	**Congressional District:**	12
Comments:	Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.		
Project Type:	FLIGHT	**Solicitation / Funding Source:**	2013 HERO NNJ13ZSA002N-Crew Health OMNIBUS
Start Date:	10/01/2014	**End Date:**	10/01/2016
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:**	NASA JSC
Contact Monitor:	Norsk, Peter	**Contact Phone:**	
Contact Email:	Peter.norsk@nasa.gov		
Flight Program:	ISS		
Flight Assignment:	Postflight data from ISS NOTE: Extended to 10/1/2016, from original end date of 9/30/2015, per PI (Ed., 7/14/15)		
Key Personnel Changes/Previous PI:			
COI Name (Institution):	De Witt, John Ph.D. (Wyle Laboratories, Inc.) Hanson, Andrea Ph.D. (Wyle Laboratories, Inc.) Peters, Brian Ph.D. (Wyle Laboratories, Inc.) Scott-Pandorf, Melissa Ph.D. (Wyle Laboratories, Inc.)		
Grant/Contract No.:	Internal Project		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	Crewmembers perform exercise programs during long-duration spaceflight to counter the detrimental effects of extended microgravity exposure. Training programs include treadmill, resistance, and cycle ergometer exercise. Exercise is performed daily by each crewmember, although volume, duration, and intensity differ across individuals. Comparison of pre- to post-flight testing measures indicates that bone, muscle, and metabolic health changes vary between individuals. In this retrospective analysis, we intend to obtain the pre- and post-flight MEDB5.2 outcome measures related to bone and muscle for all crewmembers that have completed missions on the International Space Station using ARED and T2 as their resistance and treadmill exercise devices. We intend to quantify the amount of axial loading experienced by an individual throughout their mission on ARED and T2. The results of this study will allow the identification of critical parameters that are related to exercise program success and allow for prescription optimization.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2015.
Bibliography Type:	Description: (Last Updated: 04/29/2023)