Fiscal Year:	FY 2016	**Task Last Updated:**	FY 11/30/2015
PI Name:	Cromer, Walter Ph.D.		
Project Title:	Fluid Shift Associated Lymphostasis of the Gut Induces Inflammation and Microbial Intolerance (Postdoctoral Fellowship)		
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) **HHC**:Human Health Countermeasures		
Human Research Program Risks:	(1) **Microhost**:Risk of Adverse Health Effects Due to Host-Microorganism Interactions (IRP Rev F)		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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PI Organization Type:	UNIVERSITY	**Phone:**	254-421-1530
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Zip Code:	76504-7105	**Congressional District:**	31
Comments:			
Project Type:	FLIGHT,GROUND	**Solicitation:**	2015 NSBRI-RFA-15-01 First Award Fellowships
Start Date:	10/01/2015	**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:**	NSBRI
Contact Monitor:		**Contact Phone:**	
Contact Email:			
Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Zawieja, David Ph.D. (MENTOR/ Texas A&M University)		
Grant/Contract No.:	NCC 9-58-PF04308		
Performance Goal No.:			
Performance Goal Text:			
Task Description:	POSTDOCTORAL FELLOWSHIP The lymphatic system is critical to the uptake of lipids from the diet, returning protein from the intercellular spaces back to the blood, and maintaining proper immune responses. We know that spaceflight affects nutritional uptake, muscle density, and the body's response to foreign pathogens, both new and reoccurring. These effects might be related to spaceflight environments impacts on the lymphatic system. We know from our previous work on a rat model of fluid shift, which simulates some of the effects of microgravity, that the function of the lymphatic system is depressed. We recently found that this is associated with profound intestinal inflammation and nutritional imbalance, resulting in a general wasting effect despite increased food intake. We hypothesize that lymphatic function is depressed in spaceflight and that this leads to alterations in the inflammatory status of the gut, altered intestinal microbiota, and altered		

	nutritional uptake. We will measure shifts in bacterial populations of the gut microbiota, the host's response to the microbiota, as well as antigen trafficking and nutritional absorption changes in both space-flown and hind limb suspended animals. Understanding these changes is key to the development of practical countermeasures for GI (gastrointestinal) health.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2016.
Bibliography Type:	Description: (Last Updated: 04/25/2019)