

<b>Fiscal Year:</b>	FY 2006	<b>Task Last Updated:</b>	FY 11/27/2007
<b>PI Name:</b>	Smith, Scott M Ph.D.		
<b>Project Title:</b>	Nutritional Status Assessment: SMO 016		
<b>Division Name:</b>	Human Research		
<b>Program/Discipline:</b>	HUMAN RESEARCH		
<b>Program/Discipline--Element/Subdiscipline:</b>	HUMAN RESEARCH--Biomedical countermeasures		
<b>Joint Agency Name:</b>	<b>TechPort:</b>	No	
<b>Human Research Program Elements:</b>	(1) <b>HHC:</b> Human Health Countermeasures		
<b>Human Research Program Risks:</b>	(1) <b>Bone Fracture:</b> Risk of Bone Fracture due to Spaceflight-induced Changes to Bone (2) <b>Food and Nutrition:</b> Risk of Performance Decrement and Crew Illness Due to Inadequate Food and Nutrition (3) <b>Immune:</b> Risk of Adverse Health Event Due to Altered Immune Response (4) <b>Nutrition:</b> Risk of Inadequate Nutrition (5) <b>Osteo:</b> Risk Of Early Onset Osteoporosis Due To Spaceflight (6) <b>Renal Stone:</b> Risk of Renal Stone Formation		
<b>Space Biology Element:</b>	None		
<b>Space Biology Cross-Element Discipline:</b>	None		
<b>Space Biology Special Category:</b>	None		
<b>PI Email:</b>	<a href="mailto:scott.m.smith@nasa.gov">scott.m.smith@nasa.gov</a>	<b>Fax:</b>	FY 281-483-2888
<b>PI Organization Type:</b>	NASA CENTER	<b>Phone:</b>	281-483-7204
<b>Organization Name:</b>	NASA Johnson Space Center		
<b>PI Address 1:</b>	Biomedical Research and Environmental Sciences Division/SK3		
<b>PI Address 2:</b>	2101 NASA Pkwy		
<b>PI Web Page:</b>			
<b>City:</b>	Houston	<b>State:</b>	TX
<b>Zip Code:</b>	77058-3607	<b>Congressional District:</b>	36
<b>Comments:</b>			
<b>Project Type:</b>	FLIGHT	<b>Solicitation / Funding Source:</b>	Directed Research
<b>Start Date:</b>	10/01/2005	<b>End Date:</b>	09/30/2013
<b>No. of Post Docs:</b>		<b>No. of PhD Degrees:</b>	
<b>No. of PhD Candidates:</b>		<b>No. of Master' Degrees:</b>	
<b>No. of Master's Candidates:</b>		<b>No. of Bachelor's Degrees:</b>	
<b>No. of Bachelor's Candidates:</b>		<b>Monitoring Center:</b>	NASA JSC
<b>Contact Monitor:</b>		<b>Contact Phone:</b>	
<b>Contact Email:</b>			
<b>Flight Program:</b>	ISS		
<b>Flight Assignment:</b>	ISS		
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Zwart, Sara ( USRA ) Heer, Martina ( German Aerospace Center ) Coburn, Stephen ( Indiana University, Purdue University Fort Wayne ) Booth, Sarah ( Tufts University )		
<b>Grant/Contract No.:</b>			
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	<p>SMO 016. These studies are designed to provide information about the changes in nutritional status and calcium and bone metabolism during and after space flight. It is well known that the status of some vitamins (i.e., folate, vitamin K, vitamin D) is decreased after long-duration space flight. Never before have we been able to investigate most of these changes during flight. In-flight data will assist in the interpretation of post-flight data, and it will help to assess countermeasure efficiency during flight. The investigators will measure blood levels of vitamins, minerals, oxidative damage markers, markers of iron and calcium metabolism, bone- and calcium-regulating hormones, markers of cardiovascular risk (associated with nutritional status), stress hormones, and urinary markers of bone turnover. These will provide a complete profile of nutritional status and bone and calcium metabolism, and will be important for understanding the effects of the countermeasures under consideration as well as the mechanisms of alterations that occur during space flight. Data will be collected before, during and after flight. The main potential benefit of this research is obtaining more information about the bone loss and changes in nutritional status that occur during space flight, and knowledge of how effective bone-loss countermeasures are for extended duration space flight. The information gained here will also be important for developing new treatments for metabolic disorders in the general population.</p> <p>See also <a href="http://www.nasa.gov/">http://www.nasa.gov/</a></p>
<b>Rationale for HRP Directed Research:</b>	
<b>Research Impact/Earth Benefits:</b>	The information gained here will also be important for developing new treatments for metabolic disorders in the general population.
<b>Task Progress:</b>	New project for FY2006.
<b>Bibliography Type:</b>	Description: (Last Updated: 05/24/2023)