

Fiscal Year:	FY 2008	Task Last Updated:	FY 09/17/2009
PI Name:	Smith, Scott M Ph.D.		
Project Title:	Stability of Pharmacotherapeutics and Nutrition Compounds-Nutrition		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Biomedical countermeasures		
Joint Agency Name:	TechPort:	No	
Human Research Program Elements:	(1) SHFH :Space Human Factors & Habitability (archival in 2017)		
Human Research Program Risks:	None		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Organization Name:	NASA Johnson Space Center		
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PI Web Page:			
City:	Houston	State:	TX
Zip Code:	77058-3607	Congressional District:	36
Comments:			
Project Type:	FLIGHT	Solicitation / Funding Source:	Directed Research
Start Date:	10/01/2005	End Date:	12/31/2009
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:	Meck, J@n	Contact Phone:	281-244-5405
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Flight Program:	ISS		
Flight Assignment:	ISS Increments 13, 14, 15, 16, 17, 18 NOTE: Change in end date to 12/31/2009 per JSC info (12/2009)		
Key Personnel Changes/Previous PI:	NOTE: previously combined in project entitled Stability of Pharmacotherapeutics and Nutrition Compounds, with Scott Smith as PI and Lakshmi Putcha as Co-PI; split into two Task Book projects in January 2010 for the entire project period, per JSC direction, with each CoPI listed as PI (ed.)		
COI Name (Institution):	Daniels, Vernie (Wyle Life Sciences) Swart, Sara (Universities Space Research Association) Perchonok, Michele (NASA Johnson Space Center) Kloeris, Vickie (NASA Johnson Space Center) Braby, Leslie (Texas A and M University)		
Grant/Contract No.:			
Performance Goal No.:			
Performance Goal Text:			

Task Description:	<p>Data gathered from past Space Shuttle missions suggest that some of the medications packed in the Shuttle's medical pack degrade even after relatively brief periods (less than 20 days) of space flight. The observed degradation included both physical and chemical characteristics of medicine formulations. The degradation was sufficient to influence FDA stipulated shelf-life for these formulations and may result in a loss of potency. Physical and chemical instability of medications could render treatments with degraded drugs ineffective for assurance of optimal crew health during long duration space exploration missions. An evaluation of subjective data on medications used by crewmembers during space flight indicated that eight percent of all treatments administered in the Space Shuttle program were reported ineffective. Pharmaceutical instability may modify effectiveness and safety, and is one possible cause of the ineffectiveness of treatments. Degradation of food products will also render them ineffective in providing health and energy sustenance. The stability of medications and foods used by the crew, therefore, must be adequate to facilitate safe exploration of space in the future. The Stability of Pharmacotherapeutic and Nutritional Compounds (Stability) investigation will evaluate mission critical medications and foods to understand issues relating loss of potency for medicines and to nutritional adequacy of foods in space.</p> <p>See also http://www.nasa.gov/</p>
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	<p>The results of this investigation will help understand the effects of adverse environments on food and medicines, this information will assist Earth based explorers make healthy choices for long term exploration of remote and adverse habitats like the Antarctic, arctic and the world oceans.</p>
Task Progress:	<p>The four identical Stability kits were delivered to the ISS in July 2006 on-board during the STS-121/ULF1.1 mission. The first kit was returned to Earth during the STS-121/ULF1.1 mission. The second kit was returned after 11 months of exposure during the STS-117/13A mission in June 2007. The third kit is scheduled to be returned after 1 year and 7 months of exposure during the STS-122/1E mission in February 2008. The fourth kit will be returned on a future mission.</p> <p>[Editor's note: Task added to Task Book in September 2009; information from ISS Station Science http://www.nasa.gov/]</p>
Bibliography Type:	Description: (Last Updated: 05/24/2023)