

<b>Fiscal Year:</b>	FY 2004	<b>Task Last Updated:</b>	FY 03/30/2006
<b>PI Name:</b>	Wolfe, Robert R. Ph.D.		
<b>Project Title:</b>	Nutritional countermeasures to ameliorate losses in muscle mass and function		
<b>Division Name:</b>	Human Research		
<b>Program/Discipline:</b>	NSBRI Teams		
<b>Program/Discipline--Element/Subdiscipline:</b>	NSBRI Teams--Nutrition, Physical Fitness, and Rehabilitation Team		
<b>Joint Agency Name:</b>	<b>TechPort:</b>	Yes	
<b>Human Research Program Elements:</b>	(1) <b>HHC:</b> Human Health Countermeasures		
<b>Human Research Program Risks:</b>	None		
<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:rwolfe2@uams.edu">rwolfe2@uams.edu</a>	<b>Fax:</b>	FY 501-526-5710
<b>PI Organization Type:</b>	UNIVERSITY	<b>Phone:</b>	501-526-5708
<b>Organization Name:</b>	University of Arkansas for Medical Sciences		
<b>PI Address 1:</b>	4301 W. Markham, Slot 806		
<b>PI Address 2:</b>			
<b>PI Web Page:</b>			
<b>City:</b>	Little Rock	<b>State:</b>	AR
<b>Zip Code:</b>	72205	<b>Congressional District:</b>	2
<b>Comments:</b>			
<b>Project Type:</b>	GROUND	<b>Solicitation / Funding Source:</b>	2003 Biomedical Research & Countermeasures 03-OBPR-04
<b>Start Date:</b>	07/01/2004	<b>End Date:</b>	08/31/2008
<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> NSBRI		
<b>Contact Monitor:</b>	<b>Contact Phone:</b>		
<b>Contact Email:</b>			
<b>Flight Program:</b>			
<b>Flight Assignment:</b>			
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>			
<b>Grant/Contract No.:</b>	NCC 9-58-NPFR00403		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			
<b>Task Description:</b>	<p>This proposal will investigate interactions between nutritional and exercise countermeasures as they relate to the loss of inactivity-related muscle mass and function. We propose to expand upon our previous studies demonstrating that daily supplementation with an essential amino acid (EAA) solution preserves net muscle protein synthesis and in turn, lean body mass. The preservation of lean body mass also ameliorated the loss in muscle function, however, muscle function was not entirely preserved. Thus, our data indicates that a neuromuscular component is also required to preserve both muscle mass and function. We propose to study an enhanced EAA supplementation and hypothesize that a formulation high in leucine will stimulate synthetic mechanisms in a more efficient manner to maintain muscle loss. A ground-based model designed to more closely mimic the hormonal and muscular activity alterations in spaceflight will be utilized.</p>		

**Rationale for HRP Directed Research:****Research Impact/Earth Benefits:****Task Progress:** New project for FY2004; no progress report this period.**Bibliography Type:** Description: (Last Updated: 10/23/2019)