

<b>Fiscal Year:</b>	FY 2013	<b>Task Last Updated:</b>	FY 02/04/2014
<b>PI Name:</b>	Platts, Steven H. Ph.D.		
<b>Project Title:</b>	Effects of Long Duration Spaceflight on Venous and Arterial Compliance in Astronauts		
<b>Division Name:</b>	Human Research		
<b>Program/Discipline:</b>			
<b>Program/Discipline--Element/Subdiscipline:</b>	NSBRI--Cardiovascular Alterations Team		
<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>SANS</b> :Risk of Spaceflight Associated Neuro-ocular Syndrome (IRP Rev I)		
<b>Space Biology Element:</b>	None		
<b>Space Biology Cross-Element Discipline:</b>	None		
<b>Space Biology Special Category:</b>	None		
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<b>Organization Name:</b>	NASA Johnson Space Center		
<b>PI Address 1:</b>	Cardiovascular Laboratory		
<b>PI Address 2:</b>	Biomedical Research and Environmental Sciences Division		
<b>PI Web Page:</b>			
<b>City:</b>	Houston	<b>State:</b>	TX
<b>Zip Code:</b>	77058	<b>Congressional District:</b>	36
<b>Comments:</b>			
<b>Project Type:</b>	FLIGHT,GROUND	<b>Solicitation:</b>	2012 Crew Health NNJ12ZSA002N
<b>Start Date:</b>	06/01/2013	<b>End Date:</b>	05/31/2016
<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>	Pre/Post Flight		
<b>Flight Assignment:</b>	ISS pre- and postflight		
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Lee, Stuart ( Wyle Laboratories, Inc. ) Martin, David ( Wyle Laboratories, Inc. ) Ploutz-Snyder, Robert ( Universities Space Research Association ) Stenger, Michael ( Wyle Laboratories, Inc. ) Westby, Christian ( Universities Space Research Association )		
<b>Grant/Contract No.:</b>	NCC 9-58-CA03402		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	Visual impairment and intracranial pressure (VIIP) is a newly described space flight-associated medical condition made up of a constellation of symptoms affecting at least 20% of American astronauts who have flown on ISS missions (#6 months). VIIP is defined primarily by visual acuity deficits and anatomical changes to eye structures. It has been hypothesized that the cephalad fluid shifts which occur with the loss of hydrostatic gradients are likely the primary contributor to the development of the syndrome. However, the presentation of the syndrome is similar to the terrestrial equivalent diagnosis of idiopathic intracranial hypertension (IIH) which includes elevated intracranial pressure (ICP). Loss of visual acuity is a significant threat to crew health and performance and may carry implications for years post-flight. It is therefore important to understand the pathogenesis of VIIP. The studies presented here will investigate the relationship between changes in vascular compliance and development of the VIIP syndrome in long duration spaceflight, and is relevant to 1) the solicitation NNJ12ZSA002N, Section III.A.2.a and 2) the Human Research Program Integrated Research Plan (July 2011 Revision C) 2.3.3.2 Risk of Microgravity-Induced Visual Impairment/Intracranial Pressure; specifically Gap VIIP6: How do changes in vascular compliance/pressures influence intraocular pressure or intracranial pressure?, and IRP Gap VIIP2: Does exposure to microgravity cause changes in visual acuity, intraocular pressure and/or intracranial pressure? Are the effects related to mission duration? Additionally, this research has the potential to inform medical practice on possible mechanisms for pathologies related to increased intracranial/intraocular pressure (e.g. idiopathic intracranial hypertension).
<b>Rationale for HRP Directed Research:</b>	
<b>Research Impact/Earth Benefits:</b>	0
<b>Task Progress:</b>	New project for FY2013.
<b>Bibliography Type:</b>	Description: (Last Updated: 03/01/2018)