

<b>Fiscal Year:</b>	FY 2010	<b>Task Last Updated:</b>	FY 09/12/2013
<b>PI Name:</b>	Platts, Steven H. Ph.D.		
<b>Project Title:</b>	Evaluation of Commercial Compression Garments as a Countermeasure to Post-Spaceflight Orthostatic Intolerance (OIG DSO641)		
<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>	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:steven.platts-1@nasa.gov">steven.platts-1@nasa.gov</a>	<b>Fax:</b>	FY 281-244-5090
<b>PI Organization Type:</b>	NASA CENTER	<b>Phone:</b>	281-483-8177
<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	<b>Solicitation / Funding Source:</b>	Directed Research
<b>Start Date:</b>	02/17/2010	<b>End Date:</b>	04/30/2012
<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>	Villarreal, Jennifer	<b>Contact Phone:</b>	281-483-7306
<b>Contact Email:</b>	<a href="mailto:jennifer.v311larreal@nasa.gov">jennifer.v311larreal@nasa.gov</a>		
<b>Flight Program:</b>	Shuttle		
<b>Flight Assignment:</b>			
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Locke, James Ph.D. ( NASA Johnson Space Center ) Stenger, Michael Ph.D. ( Wyle Laboratories, Inc./NASA Johnson Space Center ) Lee, Stuart M.S. ( Wyle Laboratories, Inc./NASA Johnson Space Center ) Westby, Christian Ph.D. ( Universities Space Research Association )		
<b>Grant/Contract No.:</b>	Directed Research		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	<p>One of the most important physiological changes that may negatively impact crew safety is post-flight orthostatic intolerance. Astronauts who have orthostatic intolerance are unable to maintain a normal systolic blood pressure during head-up tilt, have elevated heart rates, and may experience presyncope or syncope with upright posture. This problem affects about 20-30% of astronauts who fly short-duration missions (4–18 days) and 60-80% of astronauts who fly long-duration missions. This condition creates a potential hazard for crew members during re-entry and after landing, especially for emergency egress contingencies.</p> <p>Two countermeasures are currently employed to ameliorate post-flight orthostatic intolerance: fluid loading and an anti-gravity suit. Unfortunately, neither of these is completely effective for all phases of landing and egress; thus, continued countermeasure development is important. Preliminary evidence has shown that commercial graded compression garments that include abdominal compression can significantly improve orthostatic tolerance.</p> <p>The specific aims of this study were:</p> <ol style="list-style-type: none"><li>1. Evaluate custom-fitted, commercial compression garments as countermeasures to post-flight orthostatic intolerance during stand tests performed before and after spaceflight.</li><li>2. Determine if these garments, which provide a continuous, graded compression from the foot to the hip, with a static compression over the lower abdomen, provide superior fit and comfort as well as being easier to don.</li></ol>
<b>Rationale for HRP Directed Research:</b>	
<b>Research Impact/Earth Benefits:</b>	
<b>Task Progress:</b>	<p>New project for FY2010. [Ed. note 9/12/2013: added to Task Book when received information from HRP]</p>
<b>Bibliography Type:</b>	<p>Description: (Last Updated: 03/01/2018)</p>