

<b>Fiscal Year:</b>	FY 2013	<b>Task Last Updated:</b>	FY 08/08/2013
<b>PI Name:</b>	Norcross, Jason M.S.		
<b>Project Title:</b>	OCT High Performance EVA Glove (HPEG) Project Support		
<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>EVA:</b> Risk of Injury and Compromised Performance Due to EVA Operations		
<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>Zip Code:</b>	77058-3711	<b>Congressional District:</b>	36
<b>Comments:</b>			
<b>Project Type:</b>	GROUND	<b>Solicitation / Funding Source:</b>	Directed Research
<b>Start Date:</b>	07/02/2013	<b>End Date:</b>	09/15/2014
<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
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<b>Flight Program:</b>			
<b>Flight Assignment:</b>	NOTE: Extended to 9/15/2014 (original end date was 3/31/2014) per HRP (Ed., 6/2/14)		
<b>Key Personnel Changes/Previous PI:</b>			
<b>COI Name (Institution):</b>	Reid, Christopher Ph.D. ( Lockheed Martin/NASA Johnson Space Center ) Benson, Elizabeth ( MEI Technologies/NASA Johnson Space Center )		
<b>Grant/Contract No.:</b>	Directed Research		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	<p>EVA glove-related injuries are a known problem that some crewmembers experience and others do not. There have been various efforts to evaluate a specific EVA glove, document injuries over a limited time window, or look into a possible mechanism of glove related injury. To date, there is no comprehensive documentation of all EVA glove related injuries and possible injury mechanism.</p> <p>The specific aims of this task will be twofold: First, to develop the best current understanding of what glove-related injuries have occurred to date, and when possible, identify the specific mechanisms that caused those injuries. Second, to create a standardized method for comparison of glove injury potential from one glove to another. The type and format of the standard will largely be a function of the results of the injury incident analysis and determination of leading factors causing said injury. The specific intent of this standard would be to assess the injury potential of gloves delivered as part of the larger High Performance EVA Glove project. This will facilitate direct comparison of these and future gloves against each other and against the current Phase VI glove.</p> <p>Specific Aims:</p> <ul style="list-style-type: none"><li>• Technology Development – Mature multiple low TRL technologies that can be implemented into glove prototypes.</li><li>• Benchmarking – Refine and validate methodologies to standardize processes for evaluating the performance of new glove technologies in goal areas of mobility, durability, and injury potential.</li><li>• Prototype Build – Fabricate and test component technologies that incorporate new patterning or design, manufacturing methods, and/or material technologies.</li></ul>
<b>Rationale for HRP Directed Research:</b>	<p>Expertise native to the EVA discipline within HRP has been requested by the Engineering Directorate to augment an existing task (OCT/Space Technology Mission Directorate award for the HPEG Project). Early information from this data mining task can impact the glove designs used for the OCT/Space Technology Mission Directorate funded portion of the task creating a need to do this task concurrently. This task appropriately aligns with EVA gap closure and integrates with the advanced space suit development team at JSC. Due to the involvement of operational practices and research specific to NASA this research should be considered highly constrained.</p>
<b>Research Impact/Earth Benefits:</b>	
<b>Task Progress:</b>	New project for FY2013.
<b>Bibliography Type:</b>	Description: (Last Updated: 02/21/2024)