Fiscal Year:	FY 2016	**Task Last Updated:**	FY 11/30/2015
PI Name:	Rosenberg, Marissa Ph.D.		
Project Title:	Characterizing the Recovery of Sensorimotor Performance in Returning Astronauts (Postdoctoral Fellowship)		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:	NSBRI--Sensorimotor Adaptation Team		
Joint Agency Name:		**TechPort:**	No
Human Research Program Elements:	None		
Human Research Program Risks:	None		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
PI Email:	mrose87@gmail.com	**Fax:**	FY
PI Organization Type:	NASA CENTER	**Phone:**	707-548-8649
Organization Name:	NASA Johnson Space Center		
PI Address 1:	2101 NASA Parkway		
PI Address 2:			
PI Web Page:			
City:	Houston	**State:**	TX
Zip Code:	77058	**Congressional District:**	22
Comments:			
Project Type:	GROUND	**Solicitation:**	2015 NSBRI-RFA-15-01 First Award Fellowships
Start Date:	11/01/2015	**End Date:**	10/31/2016
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:**	NSBRI
Contact Monitor:		**Contact Phone:**	
Contact Email:			
Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Reschke, Millard Ph.D. (MENTOR/ NASA Johnson Space Center)		
Grant/Contract No.:	NCC 9-58-PF04301		
Performance Goal No.:			
Performance Goal Text:			
Task Description:	POSTDOCTORAL FELLOWSHIP The greatest changes in the sensorimotor system occur during gravitational transitions, and the transition that is imperative to understand occurs from the weightless phase of flight to landing on a planetary surface. One of the biggest challenges that we currently face are the functional impairments in crew performance that occur during this transition. An ongoing investigation, know as the Field Test, has been implemented to address these functional impairments. It has become apparent that while there are significant changes in crewmember performance associated with landing, there is also rather large variability in the crew's ability to overcome both the symptoms and functional impairments. It is believed that this variability is primarily due to the rate at which crewmembers acquire the necessary adaptive strategies. It is therefore the primary aim of this proposal to characterize these strategies that are adopted by individual crewmembers. Specifically, it is our aim to use kinematic and functional performance measurements (as developed and		

	refined in the Field Test) to define an overall recovery time constant for individual crew, and then to use trial-to-trial variability along with successful task execution to establish a method of identifying fast vs. slow adaptors. We have hypothesized that adaptation allows the nervous system mechanism to account for temporary, predictable and a limited number of sensorimotor responses that can be applied across different tasks and that fast adaptors will be more adept at applying newly learned strategies to account for different and novel situations. We are also interested in the relationship between postflight motion sickness (landing sickness [LS]), retinal slip, and dynamic visual acuity. Our primary deliverable will be an adaption characterization tool that allows for both prediction of functional performance and training countermeasures to assist slow adaptors to modify their behavioral strategy.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2016.
Bibliography Type:	Description: (Last Updated: 03/22/2017)