

Fiscal Year:	FY 2015	Task Last Updated:	FY 12/18/2014
PI Name:	Nielsen, Sheila Ph.D.		
Project Title:	Characterizing the Effects of Spaceflight on the Candida albicans Adaptation Response		
Division Name:	Space Biology		
Program/Discipline:			
Program/Discipline--Element/Subdiscipline:			
Joint Agency Name:		TechPort:	No
Human Research Program Elements:	None		
Human Research Program Risks:	None		
Space Biology Element:	(1) Cell & Molecular Biology (2) Microbiology		
Space Biology Cross-Element Discipline:	(1) Reproductive Biology (2) Immunology		
Space Biology Special Category:	(1) Translational (Countermeasure) Potential		
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Comments:	PI name change to Sheila Nielsen in 2014 (formerly Sheila Nielsen-Preiss)--Ed., 1/12/2015		
Project Type:	FLIGHT	Solicitation / Funding Source:	2014 Space Biology Flight NNH14ZTT001N
Start Date:	11/01/2014	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:	NASA ARC
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Flight Program:	ISS		
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):			
Grant/Contract No.:	NNX15AB37G		
Performance Goal No.:			
Performance Goal Text:			
Task Description:	<p>The common yeast pathogen, Candida albicans, can cause a range of diseases from superficial skin infections to systemic and life threatening infections in immunocompromised individuals. Most members of the population are carriers of this yeast at some point in their lifetime. This point becomes more concerning for astronauts who experience diminished immune responsiveness during spaceflight. In addition, many bacteria have been shown to become more virulent when grown in space. The combination of increased virulence and diminished immunity can jeopardize the health and wellbeing of flight crew. The goal of these studies is to characterize the mechanisms underlying the adaptation responses we have observed in yeast grown in modeled microgravity and in spaceflight. In addition, we will focus on determining whether yeast also become more virulent when grown in space, as our observed cellular alterations might predict. Furthermore, we will define the environmental stressors that exist during spaceflight that influence yeast</p>		

	growth. Our overriding research goals are to characterize the virulence of Candida albicans in the space environment, to understand which aspects of the environment contribute to adaptive changes within the yeast, and to identify targets that might be exploited to control yeast infection in space and on Earth.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	Research results may be used to identify targets that might be exploited to control yeast infection in space and on Earth.
Task Progress:	New project for FY2015.
Bibliography Type:	Description: (Last Updated: 06/23/2023)