Fiscal Year:	FY 2020	Task Last Updated:	FY 11/12/2019	
PI Name:	Boerma, Marjan Ph.D.			
Project Title:	Gamma-Tocotrienol as a Countermeasure against High-Energy Charged Particle-Induced Carcinogenesis, Cardiovascular Disease, and Central Nervous System Effects			
Division Name:	Human Research			
Program/Discipline:				
Program/Discipline Element/Subdiscipline:				
Joint Agency Name:		TechPort:	No	
Human Research Program Elements:	(1) SR:Space Radiation			
Human Research Program Risks:	None			
Space Biology Element:	None			
Space Biology Cross-Element Discipline:	None			
Space Biology Special Category:	None			
PI Email:	mboerma@uams.edu	Fax:	FY	
PI Organization Type:	UNIVERSITY	Phone:	501-686-6599	
Organization Name:	University of Arkansas, Little Rock			
PI Address 1:	4301 W. Markham Street, Slot 522-10			
PI Address 2:	Slot 522-10			
PI Web Page:				
City:	Little Rock	State:	AR	
Zip Code:	72205-7101	Congressional District:	2	
Comments:				
Project Type:	Ground	Solicitation / Funding Source:	2017-2018 HERO 80JSC017N0001-BPBA Topics in Biological, Physiological, and Behavioral Adaptations to Spaceflight. Appendix C	
Start Date:	01/31/2019	End Date:	03/31/2022	
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 JSC	
Contact Monitor:		Contact Phone:		
Contact Email:				
Flight Program:				
Flight Assignment:	NOTE: End date changed to 3/31/2022 pe	er NSSC information (Ed., 11/4	/20)	
Key Personnel Changes/Previous PI:	November 2019 report: No changes.			
COI Name (Institution):	Landes, Reid Ph.D. (University of Arkansas, Little Rock) Weil, Michael Ph.D. (Colorado State University) Pathak, Rupak Ph.D. (University of Arkansas, Little Rock)			
Grant/Contract No.:	80NSSC19K0437			
Performance Goal No.:				
Performance Goal Text:				

Task Description: Task Description: Task Descri	ther, s cts ce will s will			
Rationale for HRP Directed Research:				
Research Impact/Earth Benefits: There is concern about increased carcinogenesis risk after chronic exposures to low-dose ionizing radiation, such as medical treatments, occupational low-dose exposures, and radiological accidents. The current project will provide evidence for gamma-tocotrienol as a safe countermeasure against radiation-induced carcinogenesis. This informatio will not only contribute to reducing the risk of radiation exposure during deep-space travel, but also the risks of carcinogenesis from exposure to low-dose rate radiation exposures on Earth.	from n			
This is the progress report of year 1 of this project. The project is on schedule. This project makes use of a transgenic mouse model with a mutation in the p53 gene (P53 deltaP mice) on a mixed 129/SvJ and C57BL/6J background. These mice are not commercially available and need to be bred in-house. A breeding colony was established and is on schedule to produce >500 male and female mice as required for this project in year 2. Task Progress: In year 2 of the project, we plan to transport >500 mice to Brookhaven National Laboratory for exposure to simulate galactic cosmic rays at the NASA Space Radiation Laboratory. Twenty-four hours before irradiation, mice will be administered gamma-tocotrienol or vehicle. After irradiation, mice will be shipped to Colorado State University and University of Alkanses for Medical Sciences for follow up	ect ed I the			
Piblic men by Tymes Description (Lest Undeted, 11/20/2024)				
Description: (Last Opdated: 11/29/2024)				