Fiscal Voar.	EV 2022	Task Last Undated.	EV 12/12/2022
PI Name	Lewandowski Beth Ph D	Task Last Opuated.	1 1 12/12/2022
Project Title	Tempus ALS ISS Technology Demonstration		
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Division Name:	Human Research		
Program/Discipline:			
Program/Discipline Element/Subdiscipline:			
Joint Agency Name:		TechPort:	No
Human Research Program Elements:	(1) ExMC :Exploration Medical Capabilities		
Human Research Program Risks:	None		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Zip Code:	44135	Congressional District:	9
Comments:			
Project Type:	FLIGHT	Solicitation / Funding Source:	Directed Research
Start Date:	08/08/2022	End Date:	09/30/2024
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
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Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Lehnhardt, Kris M.D. (NASA Johnson Space Center) Easter, Benjamin M.D. (NASA Johnson Space Center) Suresh, Rahul M.D. (NASA Johnson Space Center) Thompson, Moriah M.D. (NASA Johnson Space Center)		
Grant/Contract No.:	Directed Research		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	The aim of this project is to evaluate the use of the Tempus Advanced Life Support (ALS) device in the spaceflight environment: • In collaboration with the European Space Agency (ESA), Phase 1 entails using the Tempus ALS device, compared to current International Space Station (ISS) medical devices, for the completion of Periodic Health Status exams and ISS medical contingency drills for 6 crewmembers (ESA = 2, NASA = 4), in order to achieve ESA's test objectives as described in the ESA Tempus ALS Technology Demonstration Activity Requirements Document (ARD)1. • NASA-led Phase 2 of the demonstration will entail Exploration Medical Capability (ExMC) and the Exploration Medical Integrated Product Team (XMIPT) working together to demonstrate the use of Tempus ALS on the ISS as part of progressively Earth-Independent Medical Operations (EIMO) through the execution of onboard medical simulations that emphasize crew autonomy during exploration medical care. The Tempus ALS is a multifunctional medical device with capabilities that include vital sign collection and monitoring, communications to enable telemedicine, interfaces with electronic health records, ultrasound, video laryngoscopy, and defibrillation. Tempus for ISS project activities will include evaluation of the usability of the Tempus ALS in a spaceflight environment, its functionality during the diagnosis and treatment of simulated medical conditions, and the increased onboard capabilities that it can provide when operated autonomously. The project results will be used to answer the question: Is the Tempus ALS a good candidate for inclusion within spaceflight medical system operations on exploration missions?
Rationale for HRP Directed Research:	This research is directed because it contains highly constrained research. Currently aboard the International Space Station (ISS), NASA has the ability to perform in-flight medical vital signs monitoring, in-flight imaging, and Periodic Health Status exams with a suite of medical devices and techniques. On the ISS, these medical procedures are currently accomplished with reliance on the Flight and Medical Operations teams on the ground. For long-duration space missions, mass, power, and volume requirements for medical devices will be increasingly limited. Further, with increased distance, the Earth-Independent Medical Operations (EIMO) capability will be a cornerstone of the provision of adequate medical care during exploration missions beyond low-Earth orbit (BLEO). There is a need to identify and evaluate medical devices that will be amenable to the EIMO construct.
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2022.
Bibliography Type:	Description: (Last Updated: 08/16/2023)