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Human Research Program Risks:NoneSpace Biology Element:NoneSpace Biology Special Category:NoneSpace Biology Special Category:NonePI Email:mgainfac@unich.eduFax:PY Cogunization Type:UNIVERSITYPI Organization Type:UNIVERSITYPI Address 1:Dopartment of NeurosciencePI Address 2:University of Michigan, Ann ArborPI Veb Page:University of Michigan, Ann ArborZip Code:Ann ArborBiology Congressional District:Identification FundowskiencePI Veb Page:Identification FundowskienceChyne, Code:Solicitation FundowskienceProject Type:Ann ArborBroger Code:Gongressional District:Project Type:Ann ArborStart Date:Identification FundowskienceStart Date:Identification FundowskienceNo.of Pable Degrese:Solicitation FundowskienceNo.of Pable Degrese:Identification FundowskienceNo.of Master's Candidates:Identification FundowskienceNo.of Master's Candidates:No.of Master's Degrese:No.of Master's Candidates:Identification FundowskienceNo.of Master's Candidates:Identification FundowskienceFight Program:Identification FundowskienceNo.of Master's Candidates:No.of Master's Degrese:No.of Master's Candidates:Identification FundowskienceNo.of Master's Candidates:Identification FundowskienceProject Type:Identification FundowskienceNo	Joint Agency Name:		TechPort:	No	
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PI Enail:maidiati/aunich.eduFixFVP1 Organization Type:UNVERSITYPhone:60-66-6888Organization Name:University of Michigan, Ann ArborUniversity of Michigan, Ann ArborP1 Address 1:Department of NeuroscienceUniversity of Michigan, Ann ArborP1 Address 2:University of Michigan, Ann ArborUniversity of Michigan, Ann ArborP1 Address 2:University of Michigan, Ann ArborUniversity of Michigan, Ann ArborP1 Web Page:Min ArborMin ArborZip Code:Ann ArborMin ArborZip Code:Min ArborSongerssional DistrictProject Type:RoNDDSolicitation FullProject Type:No.OfDADSolicitation FullNo of Post Docs:No.OfDAD Doces:No.of Master's Candidates:No.of Master' Degrees:No.of Master's Candidates:No.of Master' Degrees:Project Type:Contact Hone:Contact Email:Iter Songerschaft Inter Song	Space Biology Cross-Element Discipline:	None			
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Zip Code:48109Congressional District:12Zip Code:48109Congressional District:12Comments:0020 TRISH-RFA-2001-PD: Translational Research Institute for Space Health (TRISH) Postdoctoral FellowshipsProject Type:GROUNDSolicitation / Source Solicitation / Source0020 TRISH-RFA-2001-PD: Translational Postdoctoral FellowshipsStart Date:08/01/2020End Date:07/31/2022No. of Post Docs:1No. of PhD Degrees:No. of PhD Candidates:No. of Master' Degrees:No. of Master's Candidates:Monitoring Center:TRISHContact Monitor:Contact Monitor:Contact Email:Flight Assignment:NOTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per TRISH: UTE: End date changed to 7/31/2022 (originally 7/31/2021) per trisH: <b< td=""><td>PI Web Page:</td><td></td><td></td><td></td></b<>	PI Web Page:				
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Task Description:	POSTDOCTORAL FELLOWSHIP Space exploration exposes humans to unique stressors that if not addressed compromise physical and psychological health and performance. Sleep is known to promote physiologic resilience making it paramount in challenging circumstances, but all sleep is not the same. Progressive, stereotyped sleep stages are common in mammals and form a basic structure known as "sleep architecture." High homeostatic value has been placed on slow-wave sleep (SWS), which is the deepest state of sleep characterized synchronous 1–4 Hz brain oscillations. SWS co-occurs with important fluid rhythms and changes in neural microstructure that promote waste clearing, potentially underlying the important findings that SWS enhances memory and performance. This proposal aims to identify critical conditions for which enhancing SWS through non-invasive audio stimulation may mitigate the influence of stressors or augment performance. We propose a novel translational analog in the wild red squirrel as it is a freely behaving, tractable rodent model that exhibits human sleep patterns. The extreme northern latitude of the field site for this study provides an opportunity to investigate how a SWS countermeasure fares under varying, long-duration changes in circadian cueing. We will measure neural, cardiac, and accelerometry data to analytically describe how sleep architecture, autonomic markers of stress, and cognitive/physical performance interact. A major goal of this project is to concurrently refine the SWS countermeasure into a configurable, autonomous tool capable of being deployed towards long-duration human space missions. The perceived significance of the proposed work is to span evidence to products that bridge fundamental research towards understanding the foundations of performance and resilience while providing an operational toolset alongside empirically derived implementation strategy.
Rationale for HRP Directed Research	:
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2020.
Bibliography Type:	Description: (Last Updated: 04/10/2024)