Task Book Report Generated on: 04/25/2024

Project Type: Organization Name: Organization Name: Organization Name: Project Type: Organization Name: Program/Discipline- Elements/Subdiscipline- El	Fiscal Year:	FY 2008	Task Last Updated:	FY 06/02/2008	
Division Name: Human Research Program/Discipline: NSBRI Program/Discipline: NSBRI—Human Factors and Performance Team Limited Shothict-pline: NSBRI—Human Factors and Performance Team Limited Shothict-pline: NSBRI—Human Factors and Performance Team Limited Shothict-pline: No Limited Research Program Elements: (1) BIIP Behavioral Health & Performance (archival in 2017)  [Ilminan Research Program Elements: (1) BIIP Behavioral Health & Performance (archival in 2017)  [Ilminan Research Program Elements: (1) BIIP Behavioral Health & Performance (archival in 2017)  [Ilminan Research Program Elements: (2) Steep-Risk of Adverse Cognitive or Behavioral Conditions and Psychiatric Disorders  [Ilminan Research Program Risks: (2) Steep-Risk of Performance Develored Steep Loss, Circadian Desynchronization, and Work Overlead  Space Biology Cross-Element None Space Biology Cross-Element None Space Biology Special Category: None  PI Email: diagesidapeanmedicline userus edit Fax: FY  PI Organization Type: IINIVERSITY Phone: 215-898-9949  Organization Type: University of Pennsylvania  PI Address 1: Department of Psychiatry  PI Address 2: 423 Service Dr., 1013 Blockley Hall  PI Web Page:  City: Philadelphia State: PA  Zip Oode: 1910-4209 Congressional District: 2  Comments:  Project Type: GROUND Solicitation / Fauding 2007 Crow Health Source: NNIOT7S A002N  Start Date: 06012008 End Date: 0531/2012  No. of Pso Does: No. of PhD Degress: No. of PhD Degress: No. of PhD Degress: No. of PhD Degress: No. of Master' Degress: No. of Master' Degress: No. of Master' Degress: No. of Master' Degress: No. of Bachelor's Candidates: Contact Phone: Contact Email: Flight Program: Flight Assignment: Key Personnel Changes/Previous PI:  COI Name (Institution): Gel.Nami (University of Pennsylvania School of Medicine )  Grant/Contract No.: NCC 9-58-HFP01602  Performance Goal No.:	PI Name:	Dinges, David F. Ph.D.			
Program/Discipline: Program/Discipline- Element/Suddiscipline- Element/Suddiscipline- Element/Suddiscipline- Element/Suddiscipline- Joint Agency Name: None Space Biology Element: None Space Biology Element: None Space Biology Special Category: None PI Email: JOINT Agency Name: J	Project Title:	Countermeasures for Performance Deficits from Sleep Loss and Workload in Space Flight			
Program/Discipline- Element/Subdiscipline- Element/Subdiscipline- Element/Subdiscipline- Element/Subdiscipline- Joint Agency Name:  (1) BMcgl.Risk of Adverse Cognitive or Behavioral Conditions and Psychiatric Disorders (2) Steep.Risk of Performance Decrements and Adverse Health Outcomes Resulting from Sleep Loss, Circadian Desynchronization, and Work Overload  Space Biology Element: None  Space Biology Special Category: None  Pl Email: Viniversity of Pennsylvania Pl Email: Pl Email: Depurtment of Psychiatry Pl Organization Type: University of Pennsylvania Pl Address 1: Depurtment of Psychiatry Pl Address 2: 423 Service Dr., 1013 Blockley Hall Pl Web Page: City: Pli Web Page: City: Pli Web Page: City: Project Type: GROUND Sulcitation / Funding 2007 Crew Health Source: No. of Post Does: No. of Master' S Candidates: No. of Master' S Candidates: No. of Master' Candidates: No. of Master' Candidates: Centact Monitor: Centact Email: Flight Assignment: Key Personnet Changes/Previous Pl: COI Name (Institution): Grant/Contract No.: Creamics Goal No.: Cream	Division Name:	Human Research			
Self-Human rectors and Ferformance Leam   Joint Agency Name: (1) BMP-Behavioral Health & Performance (archival in 2017)   Human Research Program Risks: (1) BMP-Behavioral Health & Performance (archival in 2017)   Human Research Program Risks: (1) BMP-Behavioral Health & Performance Carchival in 2017)   Human Research Program Risks: (1) BMP-Behavioral Health & Performance Carchival in 2017)   Space Biology Element: None   None   Space Biology Cross-Element Desynchronization, and Work Overload   Park	Program/Discipline:	NSBRI			
Human Research Program Elements: (1) BHP-Behavioral Health & Performance (archival in 2017)    Human Research Program Risks: (2) Steep-Risk of Performance Decrements and Adverse Ilealth Outcomes Resulting from Sleep Loss, Circudian Desynchrotization, and Work Overload Space Biology Element: None		NSBRIHuman Factors and Performance Team			
Comments:   Comm	Joint Agency Name:		TechPort:	No	
Human Research Program Rislas:  2) Steep-Risla of Performance Decrements and Adverse Health Outcomes Resulting from Sleep Loss, Circadian Desynchronization, and Work Overload  Space Biology Cross-Element Discipline:  None  Space Biology Special Category:  None  PI Email:  dinges@pennmedicine.upenn.edu Fax: FY  PI Organization Type:  UNIVERSITY Phone: 215-898-9949  Organization Name:  University of Pemsylvania  PI Address 1:  Department of Psychiatry  PI Address 2:  423 Service Dr., 1013 Blockley Hall  PI Web Page:  City:  Philadelphia State: PA  Zip Code:  19104-4209 Congressional District: 2  Comments:  Project Type:  GROUND Solicitation / Funding 2007 Crew Health Source: NNU0728A002N  Start Date:  No. of Post Does:  No. of PhD Degress:  No. of PhD Degress:  No. of Master's Candidates:  No. of Master's Candidates:  No. of Master's Candidates:  No. of Backelor's Candidates:  No. of Backelor's Candidates:  Fight Program:  Flight Assignment:  Key Personnel Changes/Previous PI:  COI Name (Institution):  Gaol, Nammi (University of Pemsylvania School of Medicine)  Banks, Siobhan (University of Pemsylvania School of Medicine)	<b>Human Research Program Elements:</b>	(1) <b>BHP</b> :Behavioral Health & Performance (archival in 201	7)		
Space Biology Cross-Element Discipline:  Space Biology Special Category:  None  PI Email:  dinges/gennmedicine upenn.edu fax: FY  PI Organization Type:  UNIVERSITY Phone: 215-898-9949  Organization Name:  University of Pennsylvania  PI Address 1:  Department of Psychiatry  PI Address 2:  423 Service Dr., 1013 Blockley Hall  PI Web Page:  City:  Philadelphia State:  PA  Zip Code:  19104-4209 Congressional District:  Comments:  Project Type:  GROUND Solicitation / Funding Source:  No. of PhD Eard Source:  No. of PhD Degrees:  No. of PhD Degrees:  No. of PhD Degrees:  No. of PhD Degrees:  No. of Master's Candidates:  No. of Master's Candidates:  No. of Bachelor's Degrees:  No. of Bachelor's Contact Email:  Flight Program:  Flight Assignment:  Key Personnel Changes/Previous PI:  COI Name (Institution):  Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine) Beanks, Siobhan (University of Pennsylvania School of Medicine)	Human Research Program Risks:	(2) Sleep:Risk of Performance Decrements and Adverse Health Outcomes Resulting from Sleep Loss, Circadian			
Discipline: None Space Biology Special Category: None PI Email: dinges@pennnedicine.upenn.edu Fax: FY PI Organization Type: UNIVERSITY Phone: 215-898-9949 Organization Name: University of Pennsylvania PI Address 1: Department of Psychiatry PI Address 2: 423 Service Dr., 1013 Blockley Hall PI Web Page: City: Philadelphia State: PA Zip Code: 19104-4209 Congressional District: 2 Comments: Project Type: GROUND Solicitation / Funding 2007 Crew Health Source: NNIOTZSA00ZN Start Date: 06701/2008 End Date: 05/31/2012 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 Master's Candidates: Monitoring Center: NSBRI Contact Monitor: Contact Email: Flight Program: Flight Assignment: Key Personnel Changes/Previous PI: COI Name (Institution): Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine) Bental Contract No.: NCC 9-58-HFP01602	Space Biology Element:	None			
PI Email: dintes@pennmedicine.upenn.edu Fax: FY PI Organization Type: UNIVERSITY Phone: 215-898-9949 Organization Name: University of Pennsylvania PI Address 1: Department of Psychiatry PI Address 2: 423 Service Dr., 1013 Blockley Hall PI Web Page: City: Philadelphia State: PA Zip Code: 1910-4-209 Congressional District: 2 Comments: Project Type: GROUND Solicitation / Funding Noorge Source: Noorge Source: Noorge Philadelphia Source: Noorge Philad		None			
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Organization Name:         University of Pennsylvania           PI Address 1:         Department of Psychiatry           PI Address 2:         423 Service Dr., 1013 Blockley Hall           PI Web Page:         City:         Philadelphia         State: PA           Zip Code:         19104-4209         Congressional District:         2           Comments:         Project Type:         GROUND         Solicitation / Funding Source: NN017ZSA002N           Start Date:         06/01/2008         End Date: 05/31/2012           No. of Post Docs:         No. of PhD Candidates:         No. of PhD Candidates:         No. of Master's Degrees:           No. of Master's Candidates:         No. of Bachelor's Degrees:           No. of Bachelor's Candidates:         No. of Bachelor's Candidates: <td rowspan<="" td=""><td>PI Email:</td><td>dinges@pennmedicine.upenn.edu</td><td>Fax:</td><td>FY</td></td>	<td>PI Email:</td> <td>dinges@pennmedicine.upenn.edu</td> <td>Fax:</td> <td>FY</td>	PI Email:	dinges@pennmedicine.upenn.edu	Fax:	FY
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PI Web Page:  City: Philadelphia State: PA  Zip Code: 19104-4209 Congressional District: 2  Comments:  Project Type: GROUND Solicitation / Funding 2007 Crew Health Source: NN107ZSA002N  Start Date: 06/01/2008 End Date: 05/31/2012  No. of Post Docs: No. of PhD Degrees: No. of PhD Candidates: No. of Master' Degrees: No. of Master's 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): Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine) Grant/Contract No.: NCC 9-58-HFP01602  Performance Goal No.:	PI Address 1:	Department of Psychiatry			
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Zip Code: 19104-4209 Congressional District: 2  Comments:  Project Type: GROUND Solicitation / Funding Source: NN.0107ZSA.002N  Start Date: 06/01/2008 End Date: 05/31/2012  No. of Post Does: No. of PhD Degrees:  No. of PhD Candidates: No. of Master' Degrees:  No. of Master's Candidates: No. of Master' Degrees:  No. of Bachelor's Candidates: Monitoring Center: NSBRI  Contact Monitor: Contact Phone:  Contact Email:  Flight Program:  Flight Assignment:  Key Personnel Changes/Previous P1:  COI Name (Institution): Goel, Namni (University of Pennsylvania School of Medicine)  Banks, Siobhan (University of Pennsylvania School of Medicine)  Grant/Contract No.: NCC 9-58-HFP01602  Performance Goal No.:	PI Web Page:				
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Project Type: GROUND Solicitation / Funding 2007 Crew Health NUJ07ZSA0022N Start Date: 06/01/2008 End Date: 05/31/2012  No. of Post Docs: No. of PhD Degrees: No. of PhD Degrees: No. of PhD Candidates: No. of Master' Degrees: No. of Master's Candidates: 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): Goel, Namni (University of Pennsylvania School of Medicine ) Banks, Siobhan (University of Pennsylvania School of Medicine ) Performance Goal No.:	Zip Code:	19104-4209	<b>Congressional District:</b>	2	
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No. of Master's Candidates:  No. of Bachelor's Degrees: No. of Bachelor's Candidates:  No. of Bachelor's Candidates:  Monitoring Center: NSBRI  Contact Monitor:  Contact Email:  Flight Program:  Flight Program:  Flight Assignment:  Key Personnel Changes/Previous PI:  COI Name (Institution):  Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine)  Grant/Contract No.:  NCC 9-58-HFP01602  Performance Goal No.:	No. of Post Docs:		No. of PhD Degrees:		
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Contact Email:  Flight Program:  Flight Assignment:  Key Personnel Changes/Previous PI:  COI Name (Institution):  Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine)  Grant/Contract No.:  NCC 9-58-HFP01602  Performance Goal No.:	No. of Bachelor's Candidates:		<b>Monitoring Center:</b>	NSBRI	
Flight Assignment:  Key Personnel Changes/Previous PI:  COI Name (Institution):  Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine)  Grant/Contract No.:  NCC 9-58-HFP01602  Performance Goal No.:	Contact Monitor:		<b>Contact Phone:</b>		
Flight Assignment:  Key Personnel Changes/Previous PI:  COI Name (Institution): Goel, Namni (University of Pennsylvania School of Medicine) Banks, Siobhan (University of Pennsylvania School of Medicine)  Grant/Contract No.: NCC 9-58-HFP01602  Performance Goal No.:	Contact Email:				
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Banks, Siobhan (University of Pennsylvania School of Medicine)  Grant/Contract No.: NCC 9-58-HFP01602  Performance Goal No.:	Key Personnel Changes/Previous PI:				
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	Grant/Contract No.:	NCC 9-58-HFP01602			
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To be able to carry out mission-critical tasks at any time during a mission, astronauts must maintain a high level of performance in the face of demanding workloads and work-rest schedules that result in chronic sleep restriction. This project will use a laboratory-based study to acquire critically-needed information on the effects on performance of high cognitive workload and sleep restriction (Specific Aim 1). We will test the hypothesis that as sleep restriction accumulates, it will potentiate the performance-impairing effects of higher cognitive workload.

Another key goal of the study is to provide astronauts with an objective way to identify performance changes and the need for countermeasures for fatigue from sleep restriction and high workload. To this end, the project will complete validation of the sensitivity of the three-minute Psychomotor Vigilance Test (PVT) SelfTest to high workload and sleep restriction. PVT SelfTest feedback interfaces will also be evaluated, and the task will be tested in analog operations (e.g., NASA Extreme Environment Mission Operations - NEEMO) to establish its technical feasibility (Specific Aim 2).

Task Description:

Tertiary goals of the project include identification of biobehavioral predictors of differential vulnerability to the cognitive effects of sleep restriction and high workload (Specific Aim 3), and development of individualized biomathematical models that predict performance on the PVT SelfTest during high workload (Specific Aim 4).

The project has primary relevance to strategic goals of the NSBRI Human Factors and Performance Team. It addresses a high-priority gap identified by NASAs Small Assessment Team and Behavioral Health and Performance Program Element, and NSBRI Human Factors and Performance area. The project specifically targets questions 27 e, d, f, and g in the Bioastronautics Roadmap Risk 27 (Human Performance Failure Due to Sleep Loss and Circadian Rhythm Problems), questions 26 f, g, c, and h in Risk 26 (Mismatch between Crew Cognitive Capabilities and Task Demands), and question 25 d in Risk 25 (Human Performance Failure Due to Neurobehavioral Problems).

Rationale for HRP Directed Research:

Research Impact/Earth Benefits:

Task Progress:

New project for FY2008.

Bibliography Type:

Description: (Last Updated: 04/24/2024)