Task Book Report Generated on: 04/20/2024

Pt Name: Smith. Scort MPLD.  Project Title: Risk of visual impairment and intracranial hypercussion after space flight. Evaluation of the role of polymorphism of curyons involved in one-carbon metabolism.  Division Name: Human Research  Program/Discipline: HUMAN RESEARCH  Program/Discipline: HUMAN RESEARCH  Program/Discipline: HUMAN RESEARCH  Program/Discipline: HUMAN RESEARCH  Human Research Program Flower: (1) HHC-Human Health Countermeasures  Human Research Program Rislos: (1) SANS-Risk of Spaceflight Associated Neuro-oculus Syndrome (SANS)  Space Biology Element: None  Pl Camilian Space Canter  Pl Address 1: Biomedical Research and Environmental Sciences Division/RK1  Pl Pt Address 2: 2019 NASA Rosy  Pl Web Page:  Cliy: Nose Space Biology Space Canter  Pl Address 3: Discourant Space Canter  Pl Address 4: Biomedical Research and Environmental Sciences Division/RK1  Project Type: GROUND Substation / Funding Source: Division/RK1  Project Type: GROUND Substation / Funding Source: Division/RK1  Sur Date: Nose Space Canter  Project Type: GROUND Substation / Funding Source: Division/RK1  Nor of Pab Desc: Nose of Pab Candidates: Nose of Backedor's Degrees: Nose of Pab Candidates: Nose of Backedor's Candidates: Nose of Backedor's Degrees: Nose of Pab Candidates: Nose of Backedor's Candidates: North Ead due clauged to 09/30/2015 pc PJ (Ed. 109/14)  NOTE: Ead due clauged to 09/30/2015 pc PJ (Ed. 109/14)  NOTE: Ead due clauged to 10/2014 pc r6/27/31 HRP MTT. information (Ed. 102/13)  Key Personnel Changes Previous Pt: None  Coll Name (Institution): Creater Space Center)  Graut-Contract Nose: Directed Research  Performance Geal Tve:	Fiscal Year:	FY 2015	Task Last Updated:	FY 10/02/2015
Division Name: Illuman Research Program/Divisipline: HUMAN RESEARCH—Biomedical countermeasures Elements/Subdiscipline: HUMAN RESEARCH—Biomedical countermeasures Elements/Subdiscipline: HUMAN RESEARCH—Biomedical countermeasures  Joint Agency Name: TechPort: No  Human Research Program Elements: (I) HHC-Human Health Countermeasures  Human Research Program Elements: (I) SANS/Risk of Spaceflight Associated Neuro-ocular Syndrome (SANS)  Space Biology Cross-Element Bedepline: None  Space Biology Cross-Element Bedepline: South munith/ginesia govy  PE Email: South munith/ginesia govy  PE Email: South munith/ginesia govy  PE Email: South munith/ginesia govy  POrganization Type: NASA CENTER  Phone: 281-483-7204  Organization Name: NASA Influson Space Center  PI Address 1: Biomedical Research and Environmental Sciences Division/SK3  PI Cry  PI Address 2: 2101 NASA Plowy  PI Web Page:  City: Houston Salad Research and Environmental Sciences Division/SK3  Project Type: GROUND Subdicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  No. of Poat Duces: No. of Master' Degrees:  No. of Poat Duces: No. of Master's Candidates: No. of Master's Degrees:  No. of Master's Candidates: No. of Master's Degrees: No. of Bachelor's Degrees:  No. of Master's Candidates: No. of Master's Degrees: No. of Bachelor's Degrees:  No. of Master's Candidates: No. of Master's Degrees: No. of Bachelor's Degrees:  No. of Master's Candidates: No. of Master's Degrees: No. of Bachelor's Degrees: No. of Master's Candidates: No. of Master's Degrees: No. of Master's Candidates: No. of Master's Degrees: No. of Bachelor's Degrees: No. of Master's Candidates: No. of Master's Degrees: No. of Master's Degrees: No. of Master's Candidates: No. of Master's Degrees: No. of	PI Name:	Smith, Scott M Ph.D.		
Program/Discipline: Program/Discipline- Element/Suddiscipline- Eleme	Project Title:			the role of polymorphism of
Frogram/Discipline-  Element's Modiscipline-  District Studins   MUMAN RESEARCH-Biomedical countermeasures   TechPort: No   No	Division Name:	Human Research		
Element Subdiscipline:   No.   No.	Program/Discipline:	HUMAN RESEARCH		
Human Research Program Elements: (1)   IIIC-Human Health Countermeasures     Human Research Program Risks: (1) SANS-Risk of Spaceflight Associated Neuro-ocular Syndrome (SANS)		HUMAN RESEARCHBiomedical counter	measures	
Human Research Program Risks: (1) SANS-Risk of Spaceflight Associated Neuro-ocular Syndrome (SANS)  Space Blology Cross-Element  Space Blology Cross-Element  Space Blology Cross-Element  Space Blology Special Category: None  PI Email: sectim senithologous gov Fax: FY 281-483-2888  PI Organization Type: NASA CENTER Phone: 281-483-7204  Organization Name: NASA Johnson Space Center  PI Address 1: Blomedical Research and Environmental Sciences Division/SK3  PI Address 2: 2101 NASA Pkwy  PI Web Page:  City: Houston State: TX  Zip Code: 77058-3607 Congressional District: 36  Comments:  Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  No. of Post Does: No. of Phot Degrees: No. of Master' Degrees: No. of Master' Degrees: No. of Master' Degrees: No. of Bachelor's Degrees: No. of Bachelor's Candidates: No. of Master' Degrees: No. of Bachelor's Candidates: No. of Research Monitoring Center: NASA JSC  Contact Homitor: Norsk, Peter Contact Honor: Contact Phone:  Contact Homitor: Norsk, Peter Contact Phone:  NOTE: End date changed to 09/30/2015 per PI (Ed. 109/14) NOTE: End date changed to 1001/2014 per PI (Ed. 109/14) NOTE: End date changed to 1001/2014 per PI (Ed. 109/14) NOTE: End date changed to 1001/2014 per PI (Ed. 109/14) NOTE: End date changed to 1001/2014 per PI (Ed. 109/14) NOTE: End date changed to 1001/2014 per 627/13 HRP MTL information (Ed. 1021/13)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Directed Research  Performance Goal No.	Joint Agency Name:		TechPort:	No
Space Biology Cross-Element         None           Space Biology Cross-Element Diociplines         None           Space Biology Special Category:         None           PI Email:         scott m smith/dimasa gov         Fax:         FY 281-483-2888           PI Organization Type:         NASA CENTER         Phone:         281-483-7204           Organization Name:         NASA Johnson Space Center         Phone:         281-483-7204           PI Address 1:         Biomedical Research and Environmental Sciences Division/SK3         PI PI PI Address 2:         2101 NASA Pkwy           PI Address 2:         2101 NASA Pkwy         PI PI Address 3:         TX           City:         Houston         State:         TX           Zip Code:         77058-3607         Congressional District:         36           Comments:         Project Type:         GROUND         Solicitation / Funding Source:         Directed Research           Start Date:         03/15/2012         End Date:         09/30/2015           No. of Post Docs:         No. of PhD Degress:         No. of PhD Degress:           No. of Master's Candidates:         No. of Master's Degrees:         No. of Bachelor's Degrees:           No. of Bachelor's Candidates:         Nos. of Bachelor's Candidates:         Nos. of Bachelor's New Center:	<b>Human Research Program Elements:</b>	(1) <b>HHC</b> :Human Health Countermeasures		
Space Biology Cross-Element   None   Space Biology Cross-Element   None   Space Biology Special Category:   Space Biology Space Biology Special Category:   Space Biology Space Biology Special Category:   Space Biology Space Biolog	Human Research Program Risks:	(1) SANS:Risk of Spaceflight Associated Neuro-ocular Syndrome (SANS)		
Discipline:  Space Biology Special Category:  None  PI Email:  Scott. manifh@masa.gov  Fax: FY 281-483-2888  Pl Organization Type:  NASA CENTER  NASA Johnson Space Center  Pl Address 1:  Biomedical Research and Environmental Sciences Division/SK3  Pl Address 2:  2101 NASA Pkwy  Pl Web Page:  City:  Houston  State: TX  Zip Code:  77058-3607  Congressional District: 36  Comments:  Project Type:  GROUND  Solicitation / Funding Source:  Directed Research  Start Date:  03/15/2012  Bad Date:  09/30/2015  No. of PhD Degrees:  No. of PhD Degrees:  No. of Master's Candidates:  No. of Master's Candidates:  No. of Bachelor's Candidates:  No. of Bachelor's Candidates:  No. of Bachelor's Candidates:  North Contact Monitor:  Nork, Peter  Contact Email:  Peter norsk@masa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 10/9/14)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  Zwart, Sara (USRA/NASA Johnson Space Center)  Gregory, Jesse (University of Florida)  Plouzz-Snyder, Robert (USRA)  Grant/Contract No:  Directed Research  Directed Research  Peterormance Goal No:	Space Biology Element:	None		
PI Email: scott m. smith@mass.gov Fax: FY 281-483-2888 PI Organization Type: NASA CENTER Phone: 281-483-7204 Organization Name: NASA Johnson Space Center PI Address 1: Biomedical Research and Environmental Sciences Division/SK3 PI Address 2: 2101 NASA Pkwy PI Web Page: City: Houston State: TX Zip Code: 77058-3607 Congressional District: 36 Comments: Project Type: GROUND Solicitation / Funding Source: Directed Research Start Date: 03/15/2012 End Date: 09/30/2015 No. of PhD Degrees: No. of PhD Degrees: No. of Master' Begrees: No. of Master's Candidates: No. of Master' Degrees: No. of Bachelor's Candidates: No. of Bachelor's Degrees: No. of Bachelor's Candidates: No. of Bachelor's Degrees: No. of Bachelor's Candidates: No. of Master's Degrees: No. of Bachelor's Degrees: No. of Bachelor's Candidates: No. of Bachelor's Degrees: No. of Bachelo		None		
Pl Organization Type:	Space Biology Special Category:	None		
Organization Name: NASA Johnson Space Center  PI Address 1: Biomedical Research and Environmental Sciences Division/SK3  PI Address 2: 2101 NASA Pkwy  PI Web Page:  City: Houston State: TX  Zip Code: 77058-3607 Congressional District: 36  Comments:  Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  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: Nonshale Peter Noron Master's Degrees:  No. of Sachelor's Candidates: Nonshale Peter Noron Master's Degrees:  No. of Master's Candidates: Nonshale Peter Noron Master's Contact Phone:  Contact Monitor: Norsk, Peter Contact Phone:  Contact Email: Peter norsk@nass.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Creacy, Jesse (University of Florida)  Ploutz-Sanyder, Robert (USRA)  Grant/Contract No.: Directed Research	PI Email:	scott.m.smith@nasa.gov	Fax:	FY 281-483-2888
PI Address 1: Biomedical Research and Environmental Sciences Division/SK3  PI Address 2: 2101 NASA Pkwy  PI Web Page:  City: Houston State: TX  Zip Code: 77058-3607 Congressional District: 36  Comments:  Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End bate: 09/30/2015  No. of Pab Degrees:  No. of PhD Candidates: 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: Norsk, Peter Contact Phone:  Contact Email: Peter norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 1/31/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida)  Flouts-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:	PI Organization Type:	NASA CENTER	Phone:	281-483-7204
PI Address 2: 2101 NASA Pkwy  PI Web Page:  City: Houston State: TX  Zip Code: 77058-3607 Congressional District: 36  Comments:  Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  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: NASA JSC  Contact Monitor: Norsk, Peter Contact Phone:  Contact Email: Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 11/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Gregory, Jesse (University of Florida)  Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:	Organization Name:	NASA Johnson Space Center		
PI Web Page:  City: Houston State: TX  Zip Code: 77058-3607 Congressional District: 36  Comments:  Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  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: NASA JSC  Contact Monitor: Norsk, Peter Contact Phone:  Contact Email: Peter.norsk@nasa.gox  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 11/31/2014 per PI (Ed., 12/26/13)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Gregory, Jesse (University of Florida)  Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:	PI Address 1:	Biomedical Research and Environmental Sci	ences Division/SK3	
City: Houston State: TX  Zip Code: 77058-3607 Congressional District: 36  Comments:  Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  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: Norsk, Peter Contact Phone:  Contact Email: Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 10/9/14)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  Zwart, Sara (USRA/NASA Johnson Space Center)  Gregory, Jesse (University of Florida)  Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:	PI Address 2:	2101 NASA Pkwy		
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Comments: Project Type: GROUND Solicitation / Funding Source: Directed Research Start Date: 03/15/2012 End Date: 09/30/2015 No. of Post Docs: No. of PhD Degrees: No. of PhD Candidates: No. of Master' Degrees: No. of Master's Candidates: No. of Master's Degrees: No. of Bachelor's Candidates: No. of Bachelor's Degrees: No. of Bachelor's Candidates: Monitoring Center: NASA JSC Contact Monitor: Norsk, Peter Contact Phone: Contact Email: Peter.norsk@nasa.gov. Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014) NOTE: End date changed to 10/31/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research Performance Goal No.:	City:	Houston	State:	TX
Project Type: GROUND Solicitation / Funding Source: Directed Research  Start Date: 03/15/2012 End Date: 09/30/2015  No. of Post Docs: No. of PhD Degrees:  No. of PhD Candidates: No. of Master' Degrees:  No. of Master's Candidates: No. of Master's Degrees:  No. of Bachelor's Candidates: No. of Bachelor's Degrees: No. of Bachelor's Center: NASA JSC  Contact Monitor: Norsk, Peter Contact Phone:  Contact Email: Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 10/31/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 1/31/2014 per PI (Ed., 12/26/13)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  COI Name (Institution): Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida)  Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:	Zip Code:	77058-3607	Congressional District:	36
Start Date: 03/15/2012 End Date: 09/30/2015  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: No. of Bachelor's Degrees:  No. of Bachelor's Candidates: Monitoring Center: NASA JSC  Contact Monitor: Norsk, Peter Contact Phone:  Contact Email: Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date changed to 1/31/2014 per PI (Ed., 12/26/13) NOTE: End date changed to 1/31/2014 per PI (Ed., 12/26/13)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:	Comments:			
No. of Post Docs:  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: Norsk, Peter Contact Monitor: Norsk, Peter Contact Email: Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014) NOTE: End date is 3/31/2014 per PI (Ed., 04/10/2014) NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI: None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research Performance Goal No.:	Project Type:	GROUND	<b>Solicitation / Funding Source:</b>	Directed Research
No. of PhD Candidates:  No. of Master's Candidates:  No. of Bachelor's Candidates:  Norte: End Contact Monitor:  Norte: End date changed to 09/30/2015 per PI (Ed., 10/9/14)  NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13)  NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  Zwart, Sara (USRA/NASA Johnson Space Center)  Gregory, Jesse (University of Florida)  Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	Start Date:	03/15/2012	End Date:	09/30/2015
No. of Master's Candidates:  No. of Bachelor's Degrees:  No. of Bachelor's Candidates:  No. of Bachelor's Candidates:  No. of Bachelor's Candidates:  Norsk, Peter  Contact Monitor:  Norsk, Peter  Contact Email:  Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13) NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  COI Name (Institution):  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	No. of Post Docs:		No. of PhD Degrees:	
No. of Bachelor's Candidates:  Norsk, Peter  Contact Monitor:  Norsk, Peter  Contact Phone:  Contact Email:  Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13) NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	No. of PhD Candidates:		No. of Master' Degrees:	
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Contact Email:  Peter.norsk@nasa.gov  Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13) NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	No. of Bachelor's Candidates:		<b>Monitoring Center:</b>	NASA JSC
Flight Program:  NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13) NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	Contact Monitor:	Norsk, Peter	Contact Phone:	
NOTE: End date changed to 09/30/2015 per PI (Ed., 10/9/14) NOTE: End date changed to 10/01/2014 per PI (Ed., 04/10/2014)  NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13) NOTE: End date changed to 1/31/2014 per 6/27/13 HRP MTL information (Ed., 10/21/13)  Key Personnel Changes/Previous PI:  None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	Contact Email:	Peter.norsk@nasa.gov		
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Key Personnel Changes/Previous PI: None  Zwart, Sara (USRA/NASA Johnson Space Center) Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.: Directed Research  Performance Goal No.:		NOTE: End date is 3/31/2014 per PI (Ed., 12/26/13)		
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COI Name (Institution):  Gregory, Jesse (University of Florida) Ploutz-Snyder, Robert (USRA)  Grant/Contract No.:  Directed Research  Performance Goal No.:	Key Personnel Changes/Previous PI:	None		
Performance Goal No.:	COI Name (Institution):	Gregory, Jesse (University of Florida)		
	Grant/Contract No.:	Directed Research		
Performance Goal Text:	Performance Goal No.:			
	Performance Goal Text:			

Task Book Report Generated on: 04/20/2024

Task Description:	The occurrence of long-term or permanent changes in vision of International Space Station crew members during and after flight has been described as "the most significant clinical issue to date" for the U.S. space program. NASA has conducted 2 workshops in which the clinical issues were characterized as the presence of choroidal folds and occurrence of papilledema, significantly elevated opening pressures after lumbar puncture, and MRI (magnetic resonance imaging) visualization showing optic nerve swelling. A primary forward focus has been evaluation of intracranial hypertension and fluid shifts.  In evaluating data collected from the Nutritional Status Assessment Supplemental Medical Objective (SMO), we have identified elevations in 4 metabolites of the one-carbon metabolism pathway in affected crew members studied to date. These elevations and related data strongly suggest that polymorphism(s) of one or more of the enzymes in this pathway exist(s) in the affected crew members. The incidence of such polymorphisms in the general population is relatively high, and they have been associated on Earth with increased risk of stroke and other cardiovascular, and specifically cerebrovascular, events. Therefore it is within the realm of plausibility, given the number and ethnic background of the affected astronauts, that these polymorphisms could be causing the cerebrovascular and optical medical issues in astronauts. This evidence demands follow-up to more clearly define this relationship. The proposed study will accomplish this. We expect that, at a minimum, the results of the proposed effort will provide a guiding path for other research to be conducted that would allow this problem to be defined and resolved.
Rationale for HRP Directed Research:	This research is directed because it contains highly constrained research, which requires focused and constrained data gathering and analysis that is more appropriately obtained through a non-competitive proposal.
Research Impact/Earth Benefits:	We expect to find evidence of a relationship between polymorphism incidence, biochemical analytes, and vision and optic examination results in affected crew members. These results will guide the path for further research to define a clinical treatment plan for individuals developing symptoms during flight. The results of this effort may also have significant Earth-based applications, and may inform the understanding and treatment of idiopathic intracranial hypertension, migraine headaches, and other cerebrovascular issues.
Task Progress:	Seventy-four past, present, and future International Space Station (ISS) crewmembers were recruited to provide blood samples for biochemical, enzymatic, and limited genotype/polymorphism analyses. Genomic DNA prepared from peripheral leukocytes was analyzed for the existence of 5 single-nucleotide polymorphisms in the one-carbon metabolism pathway: 5,10-methylenetetrahydrofolate reductase (MTHFR) 677C->T, MTHFR 1298A->T, serine hydroxymethyltransferase 1 (SHMT1) 1420C->T, cystathionine \( \beta\)-synthase (CBS) 844ins68, and 5-methyltetrahydrofolate homocysteine methyltransferase reductase (MTRR) 66A->G. Data from vision and related eye exams was obtained, and we sought to relate those findings to the data from our study. Study has been completed, results published – E-published in August 2015; expected final publication January 2016. These findings document a genetic predisposition for some astronauts to develop VIIP (Vision Impairment and Intracranial Pressure) issues during flight. We have proposed a series of follow-on experiments to clarify and extend these findings. The implications of this research for one of NASA's highest priority crew health risks are significant, along with the implications for a better understanding of the role of one-carbon metabolism in the health of the general population.
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