Task Book Report Generated on: 04/25/2024

Project Title: Integrated Resistance and Aerobic Exercise Training With Small Compact Exercise Equipment  Diction Name: Human Research  Program Discipline: NSBRI  Program Discipline: NSBRI  Program Discipline: NSBRI  Program Discipline: NSBRI Shall Alterations Team  Joint Agency Name: Tech Port: No  Human Research Program Elements: (1) HHC-Hurran Health Countermeasures:  (1) Aerobic Risk of Robic Peature due to Spaceflight-induced Changes to Bone (3) Musele Risk of Robic Peature due to Spaceflight-induced Changes to Bone (3) Musele Risk of Impaired Performance Capibilities Due to Reduced Aerobic Capocity (2) Obsor Frature Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Musele Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Obsor-Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Musele Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Musele Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance (4) Musele Risk of Resistance (4) Resistance Risk of Impaired Performance Due to Reduced Musele Size, Strength and Endurance Resistance Risk of Impaired Performance Resistance Risk of Impaired Performance Resistance Risk of Impaired Risk of Resistance Risk of Ri				
Project Title: Integrated Resistance and Acrobic Exercise Training With Small Compact Exercise Equipment    Division Name:   Human Research	Fiscal Year:	FY 2016	Task Last Updated:	FY 11/07/2016
Division Name:   Human Research   NSBRI   NSBRI   NSBRI   TechPort:   No	PI Name:	Ploutz-Snyder, Lori L. Ph.D.		
Program/Discipline: Program/Discipline- Element/Subdiscipline:  NSRI-Museuloskeletal Alterations Team Element/Subdiscipline:  Joint Agency Name:  TechPort: No  Human Research Program Elements:  (I) HHC-Human Health Countermeasures  (I) Aeroble-Risk of Reduced Physical Performance Capabilities Due to Reduced Aerobic Capacity (2) Bone Fracture-Risk of Done Tencture due to Spaceflight-induced Changes to Bone (3) Musele-Risk of Empiriced Performance Dae to Reduced Musele-Size, Strength and Endurance (4) Obstea, Risk of Early Onset Osteoperosis Due To Spaceflight  None  Space Biology Element: None  None  Space Biology Element: None  None  PL Email: None  PL Email: None  PL Garders St. OBL 4170, 1402 Washington Hts.  PL Garders St. OBL 4170, 1402 Washington Hts.  PL Address 1: OBL 4170, 1402 Washington Hts.  PL Address 2: School of Kinesiology  PL Web Page:  City: Ann Arbor  Ann Arbor  State: MI  Comments: Project Type: GROUND  Solicitation / Funding Source: 2011 Crew Health NNJ112SA002NA  Start Date: O9/01/2012 Rid Date: On, of PhD Degress: On, of PhD Degress: On, of Master's Candidates: O9/01/2012 No. of PhD Degress: On, of Master's Candidates: On, of Master's Candidates	Project Title:	Integrated Resistance and Aerobic Exerci	se Training With Small Compact E	xercise Equipment
Program/Discipline- Elements/budiscipline- None Elements/budiscipline- None Elements/budiscipline- None None None None None None Elements/budiscipline- Elements/budiscipline- None None Elements/budiscipline- Elements/budiscipline	Division Name:	Human Research		
Elementz Shafkiesplines Joint Agency Name:    Human Research Program Elements:   (1) HHC-Human Health Countermeasures	Program/Discipline:	NSBRI		
Human Research Program Elements:  (1) Aerobic-Risk of Reduced Physical Performance Capabilities Due to Reduced Aerobic Capacity (2) Bone Fracture Risk of Bone Fracture due to Spaceflight-induced Changes to Bone (3) Marcal-Risk of Reduced Physical Performance Capabilities Due to Reduced Aerobic Capacity (3) Marcal-Risk of Inspired Performance Due to Reduced Massle Size, Strength and Endurance (4) Oster-Risk Of Early Onset Osteroperonis Due To Spaceflight (4) Oster-Risk Of Early Onset Osteroperonis Due To Spaceflight (5) Marcal-Risk of Inspired Performance Due to Reduced Massle Size, Strength and Endurance (4) Oster-Risk Of Early Onset Osteroperonis Due To Spaceflight (5) Marcal-Risk of Inspired Performance Capabilities Due to Reduced Aerobic Capacity (5) Mone  PI Email:    Joint Description	Program/Discipline Element/Subdiscipline:	NSBRIMusculoskeletal Alterations Tea	m	
Human Research Program Risks:   Campacity   Campacit	Joint Agency Name:		TechPort:	No
Human Research Program Risks:  2) Onter Facture-Risk of Bone Fracture due to Spaceflight-induced Changes to Bone (3) Muscle Risk of Impuring Performance Due to Reduced Muscle Size, Strength and Endurance (4) Osteo-Risk Of Early Onset Osteoporosis Due To Spaceflight  None  Space Biology Cross-Element None  None  PI Email:    Ionic Administry   None   Fax: FY	<b>Human Research Program Elements:</b>	(1) <b>HHC</b> :Human Health Countermeasure	s	
Space Biology Cross-Element Discipline:  Space Biology Cross-Element Discipline:  None  PI Email:    None   PI Email:   None   Pax: FY	Human Research Program Risks:	(2) <b>Bone Fracture</b> : Risk of Bone Fracture (3) <b>Muscle</b> : Risk of Impaired Performance	e due to Spaceflight-induced Change e Due to Reduced Muscle Size, Stre	es to Bone
Space Biology Special Category: None  Space Biology Special Category: None  PI Email:	Space Biology Element:	None		
PI Email: Jories@umich.edu Fax: FY PI Organization Type: UNIVERSITY Phone: (734) 764-5210 Organization Type: UNIVERSITY Phone: (734) 764-5210 Organization Name: University of Michigan PI Address 1: OBL 4170, 1402 Washington Hts. PI Address 2: School of Kinesiology PI Web Page: City: Ann Arbor State: MI Zip Code: 48109-2013 Congressional District: 12 Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016. Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA Start Date: 09/01/2012 End Date: 06/30/2016 No. of PhD Degrees: 0 No. of PhD Dandidates: 0 No. of Master' Degrees: 0 No. of PhD Candidates: 0 No. of Master' Degrees: 0 No. of Bachelor's Candidates: 0 No. of Bachelor's Degrees: 0 No. of Bachelor's Candidates: 0 Monitoring Center: NSBR1 Contact Honitor: Contact Phone:  Contact Email: Flight Program:  NOTE: End date changed to 6/30/2016 per NSBR1 (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBR1 report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Key Personnel Changes/Previous PI:  Adams, Gregory (University of California, Irvine) Adams, Gregory (University of California, Irvine) Adams, Gregory (University of Ealfornia, Irvine) Royales, Effety (University Space Research Association) Socit, Jessica (University of Texas Medical Branch)  Performance Goal No.:	Space Biology Cross-Element Discipline:	None		
Pl Organization Type: UNIVERSITY Phone: (734) 764-5210 Organization Name: University of Michigan Pl Address 1: OBL 4170, 1402 Washington Hts.  Pl Address 2: School of Kinesiology Pl Web Page: City: Ann Arbor State: MI Zip Code: 48109-2013 Congressional District: 12 Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016. Project Type: GROUND Solicitation/NASA Johnson Space Center until July 2016. Start Date: 9901/2012 End Date: 06/30/2016 No. of Post Docs: 0 No. of PhD Degrees: 0 No. of PhD Candidates: 0 No. of Master' Degrees: 0 No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0 No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI Contact Monitor: Contact Email: Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Calorzac, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Notle: Sessica (Universities Space Research Association) Socit, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Exas Medical Branch) Performance Goal No.:	Space Biology Special Category:	None		
Organization Name: University of Michigan  PI Address 1: OBL 4170, 1402 Washington Hts.  PI Address 2: School of Kinesiology  PI Web Page:  City: Ann Arbor State: MI  Zip Code: 48109-2013 Congressional District: 12  Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.  Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA  Start Date: 09/01/2012 End Date: 06/30/2016  No. of Pab Degrees: 0  No. of Pab Degrees: 0  No. of PhD Degrees: 0  No. of PhD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0  No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI  Contact Monitor: Contact Honitor:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI [Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  COI Name (Institution): Regreey: University of California, Irvine )  Adams, Gregory (University of California, Irvine )  Adams, Gregory (University of California, Irvine )  Scott, Isseaic (Universities Space Research Association )  Dillon, Edgar (The Universities Space Research Association )  Dillon, Edgar (The University of Texas Medical Branch)	PI Email:	lorips@umich.edu	Fax:	FY
PI Address 1: OBL 4170, 1402 Washington Hts.  PI Address 2: School of Kinesiology  PI Web Page:  City: Ann Arbor State: MI  Zip Code: 48109-2013 Congressional District: 12  Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.  Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA  Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Does: 0 No. of PhD Degrees: 0  No. of PhD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Master's Degrees: 0  No. of Master's Candidates: 0 No. of Backelor's Degrees: 0  No. of Backelor's Candidates: 0 Contact Phone:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  COI Name (Institution): Ryder, Jeffrey (University of California, Irvine )  Contract No.: NCC 9-58-MA02801  Performance Goal No.:	PI Organization Type:	UNIVERSITY	Phone:	(734) 764-5210
PI Address 2: School of Kinesiology PI Web Page:  City: Ann Arbor State: MI  Zip Code: 48109-2013 Congressional District: 12  Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.  Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA  Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Docs: 0 No. of PhD Degrees: 0  No. of PhD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0  No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI  Contact Monitor: Contact Phone:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  COI Name (Institution): Haddad, Fadia (University of California, Irvine)  Caiozzo, Vincent (University of California, Irvine)  Scott, Jessica (Universities Space Research Association)  Scott, Jessica (Universities Space Research Association)  Dillon, Edgar (The University of Texas Medical Branch)  Performance Goal No.:	Organization Name:	University of Michigan		
PI Web Page:  City: Ann Arbor State: MI  Zip Code: 48109-2013 Congressional District: 12  Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.  Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA  Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Docs: 0 No. of PhD Degrees: 0  No. of PhD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 Monitoring Center: NSBRI  Contact Monitor: Contact Phone:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  COI Name (Institution): Haddad, Fadia (University of California, Irvine)  Caiozzo, Vincent (University of California, Irvine)  Caiozzo, Universit of California, Irvine)  Ryder, Jeffrey (Universities Space Research Association)  Scott, Jessica (Universities Space Research Association)  Dillon, Edgar (The University of Texas Medical Branch)  Performance Goal No.:	PI Address 1:	OBL 4170, 1402 Washington Hts.		
City: Ann Arbor State: MI  Zip Code: 48109-2013 Congressional District: 12  Comments: Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.  Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA  Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Docs: 0 No. of PhD Degrees: 0  No. of PbD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0  No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI  Contact Monitor: Contact Phone:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine)  Caiozzo, Vincent (University of California, Irvine)  Adams, Gregory (University of California, Irvine)  Contract No.: NCC 9-58-MA02801  Performance Goal No.:	PI Address 2:	School of Kinesiology		
Zip Code:  48109-2013 Congressional District:  Previously at Universities Space Research Association/NASA Johnson Space Center until July 2016.  Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA  Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Docs: 0 No. of PhD Degrees: 0 No. of PhD Candidates: 0 No. of Master' Degrees: 0 No. of Master' Degrees: 0 No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0 No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI Contact Monitor: Contact Email: Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Grant/Contract No.: NCC 9-58-MA02801  Performance Goal No.:	PI Web Page:			
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Project Type: GROUND Solicitation / Funding Source: 2011 Crew Health NNJ11ZSA002NA Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Docs: 0 No. of PhD Degrees: 0  No. of PhD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0  No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI  Contact Monitor: Contact Phone:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  COI Name (Institution): Haddad, Fadia (University of California, Irvine)  Adams, Gregory (Universities Space Research Association)  Scott, Jessica (University of Texas Medical Branch)  Grant/Contract No.: NCC 9-58-MA02801  Performance Goal No.:	Zip Code:	48109-2013	<b>Congressional District:</b>	12
Start Date: 09/01/2012 End Date: 06/30/2016  No. of Post Docs: 0 No. of PhD Degrees: 0  No. of PhD Candidates: 0 No. of Master' Degrees: 0  No. of Master's Candidates: 0 No. of Bachelor's Degrees: 0  No. of Bachelor's Candidates: 0 Monitoring Center: NSBRI  Contact Monitor: Contact Phone:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine)  Caiozzo, Vincent (University of California, Irvine)  Adams, Gregory (University of California, Irvine)  Ryder, Jeffrey (Universities Space Research Association)  Scott, Jessica (Universities Space Research Association)  Dillon, Edgar (The University of Texas Medical Branch)  Performance Goal No.:	Comments:	Previously at Universities Space Research	n Association/NASA Johnson Space	e Center until July 2016.
No. of Post Docs:  0	Project Type:	GROUND	<b>Solicitation / Funding Source:</b>	2011 Crew Health NNJ11ZSA002NA
No. of PhD Candidates:  0	Start Date:	09/01/2012	End Date:	06/30/2016
No. of Master's Candidates:  No. of Bachelor's Degrees:  Norte: End Sachelor's Degrees:  Norte: Contact Phone:  Norte: End Sachelor's Contact Phone:  Norte: End Sachelor's Degrees:  Norte:	No. of Post Docs:	0	No. of PhD Degrees:	0
No. of Bachelor's Candidates:  Contact Monitor:  Contact Phone:  Contact Phone:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Grant/Contract No.:  NCC 9-58-MA02801	No. of PhD Candidates:	0	No. of Master' Degrees:	0
Contact Monitor:  Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Performance Goal No.:	No. of Master's Candidates:	0	No. of Bachelor's Degrees:	0
Contact Email:  Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16)  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Grant/Contract No.:  NCC 9-58-MA02801  Performance Goal No.:	No. of Bachelor's Candidates:	0	<b>Monitoring Center:</b>	NSBRI
Flight Program:  NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Performance Goal No.:	Contact Monitor:		<b>Contact Phone:</b>	
NOTE: End date changed to 6/30/2016 per NSBRI (Ed., 6/29/16) NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Performance Goal No.:	Contact Email:			
Flight Assignment:  NOTE: End date changed to 8/31/2016 per October 2014 NSBRI report submission (Ed., 10/22/14)  Key Personnel Changes/Previous PI:  Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Grant/Contract No.:  NCC 9-58-MA02801  Performance Goal No.:	Flight Program:			
Haddad, Fadia (University of California, Irvine) Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Grant/Contract No.:  NCC 9-58-MA02801  Performance Goal No.:	Flight Assignment:			nission (Ed., 10/22/14)
Caiozzo, Vincent (University of California, Irvine) Adams, Gregory (University of California, Irvine) Ryder, Jeffrey (Universities Space Research Association) Scott, Jessica (Universities Space Research Association) Dillon, Edgar (The University of Texas Medical Branch)  Grant/Contract No.:  NCC 9-58-MA02801  Performance Goal No.:	Key Personnel Changes/Previous PI:			
Performance Goal No.:	COI Name (Institution):	Caiozzo, Vincent (University of Califor Adams, Gregory (University of Califor Ryder, Jeffrey (Universities Space Resease Scott, Jessica (Universities Space Resease	rnia, Irvine ) nia, Irvine ) carch Association ) arch Association )	
	Grant/Contract No.:	NCC 9-58-MA02801		
Performance Goal Text:	Performance Goal No.:			
	Performance Goal Text:			

Task Book Report Generated on: 04/25/2024

Task Description:	This proposal aims to validate in an analog setting a small compact exercise device for the protection of cardiovascular, muscle, and bone health. This study leverages both currently funded National Space Biomedical Research Institute (NSBRI) and NASA work to bring together for the first time, a promising new exercise device and exercise prescription thus placing this study at a high countermeasure readiness level (moving from 6-7). More specifically, the NSBRI funded M-MED device uses a flywheel to provide loading for either high force-low repetition resistance exercise or low force-high repetition, endurance exercise (rowing). Recent data support M-MED training effectiveness in both ambulatory subjects and over 10 days of muscle unloading using unilateral lower limb suspension model. Accordingly, a new NASA funded exercise prescription study integrating resistance and aerobic training (iRAT) has been effective in the preservation of muscle and cardiovascular function over 14 days of bedrest, but requires the use of 5 different exercise machines. This proposal will combine the M-MED exercise device and the iRAT exercise prescription into a 70 day bedrest study. Outcome measurements related to cardiovascular, muscle and bone health will be obtained and integrated to assess countermeasure effectiveness.
Rationale for HRP Directed Research	h:
Research Impact/Earth Benefits:	Research Impact: The comparison of a single exercise device to an International Space Station-like suite of exercise devices will inform long duration exploration exercise hardware requirements as well as provide a proof of concept of a exercise efficacy using a single device.  Earth Benefits: Developing the most efficient exercise prescription is valuable to a wide population who seek to optimize the health benefits of exercise using as little time as possible. The validation of novel compact exercise hardware may also be useful for other situation where space constraints limit the availability of large scale exercise equipment.
Task Progress:	Final report. Study complete; manuscripts being prepared. Muscle biopsy analyses continue at University of California Irvine.
Bibliography Type:	Description: (Last Updated: 04/29/2023)
Articles in Peer-reviewed Journals	Ploutz-Snyder LL, Downs M, Goetchius E, Crowell B, English KL, Ploutz-Snyder R, Ryder JW, Dillon EL, Sheffield-Moore M, Scott JM. "Exercise training mitigates multi-system deconditioning during bed rest." Med Sci Sports Exerc. 2018 Sep;50(9):1920-8. <a href="https://doi.org/10.1249/MSS.0000000000001618">https://doi.org/10.1249/MSS.000000000000001618</a> ; PubMed <a href="https://doi.org/10.1249/MSS.00000000000001618">PMID: 29924746</a> , Sep-2018
Articles in Peer-reviewed Journals	English KL, Downs M, Goetchius E, Buxton R, Ryder JW, Ploutz-Snyder R, Guilliams ME, Scott JM, Ploutz-Snyder LL. "High intensity training during spaceflight: Results from the NASA Sprint Study." npj Microgravity. 2020 Aug 18;6(1):21. <a href="https://doi.org/10.1038/s41526-020-00111-x">https://doi.org/10.1038/s41526-020-00111-x</a> ; <a href="https://doi.org/10.1038/s41526-020-00111-x">PMID: 33574275</a> , Aug-2020
Articles in Peer-reviewed Journals	Downs ME, Scott JM, Ploutz-Snyder LL, Ploutz-Snyder R, Goetchius E, Buxton RE, Danesi CP, Randolph KM, Urban RJ, Sheffield-Moore M, Dillon EL. "Exercise and testosterone countermeasures to mitigate metabolic changes during bed rest." Life Sci Space Res. 2020 Aug;26:97-104. <a href="https://doi.org/10.1016/j.lssr.2020.03.008">https://doi.org/10.1016/j.lssr.2020.03.008</a> ; <a href="https://doi.org/10.1016/j.lssr.2020.03.008">PMID: 32718692</a> ; <a 10.1016="" doi.org="" href="https://doi.org/10.1016/j.lssr.2020.03.008&lt;/a&gt;; &lt;a href=" https:="" j.lssr.2020.03.008"="">PMID: 32718692</a> ; <a href="&lt;/td"></a>
Articles in Peer-reviewed Journals	Scott JM, Downs M, Buxton R, Goetchius E, Crowell B, Ploutz-Snyder R, Hackney KJ, Ryder J, English K, Ploutz-Snyder LL. "Disuse-induced muscle loss and rehabilitation: The National Aeronautics and Space Administration bed rest study." Crit Care Explor. 2020 Dec;2(12):e0269. https://doi.org/10.1097/CCE.00000000000000269; PMID: