Fiscal Year:	FY 2015	**Task Last Updated:**	FY 11/12/2014
PI Name:	Rianon, Nahid M.D.		
Project Title:	Effects of Angiotensin Converting Enzyme Inhibitors (ACEI) on Bone Turnover		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Biomedical countermeasures		
Joint Agency Name:		**TechPort:**	No
Human Research Program Elements:	(1) **HHC**:Human Health Countermeasures		
Human Research Program Risks:	(1) **Bone Fracture**:Risk of Bone Fracture due to Spaceflight-induced Changes to Bone (2) **Osteo**:Risk Of Early Onset Osteoporosis Due To Spaceflight		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
PI Email:	Nahid.J.Rianon@uth.tmc.edu	**Fax:**	FY
PI Organization Type:	UNIVERSITY	**Phone:**	832-878-0614
Organization Name:	University of Texas Houston Health Science Center		
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PI Address 2:	6431 Fannin St		
PI Web Page:			
City:	Houston	**State:**	TX
Zip Code:	77030-1501	**Congressional District:**	9
Comments:			
Project Type:	GROUND	**Solicitation / Funding Source:**	2012 Crew Health NNJ12ZSA002N
Start Date:	10/01/2013	**End Date:**	12/31/2015
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:**	NASA ARC
Contact Monitor:	Ronca, April Elizabeth	**Contact Phone:**	650.400.6019
Contact Email:	april.e.ronca-1@nasa.gov		
Flight Program:			
Flight Assignment:	NOTE: Extended to 12/31/2015 per A. Chu/ARC and NSSC information (Ed., 7/28/15) NOTE: Extended to 9/30/2015 (original end date was 9/30/2014) per NSSC information and A. Chu/ARC (Ed., 9/10/14)		
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Smith, Scott (NASA Johnson Space Center)		
Grant/Contract No.:	NNX13AQ92G		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	Antihypertensive medications affecting the renin-angiotensin system (RAS), specifically angiotensin converting enzyme inhibitor (ACEI), have been documented to decrease bone turnover in animals, and improved bone mineral density (BMD) in preliminary human studies. We propose a randomized trial to collect pilot data in 30 men and 30 women (15 treated with ACEI and 15 not treated with RAS related medications) to investigate if ACEI prevents bone loss by decreasing bone turnover. We hypothesize that ACEI use for 3 months to treat hypertension (HTN) in older adults will decrease bone turnover by decreasing bone resorption, the primary factor in spaceflight induced bone loss. These results could provide another tool in protecting bone health of astronauts, using a pharmacological agent with very few side effects, which is a significant concern of agents currently being tested. Further, these data may also help understand variability in existing spaceflight data, where crewmembers may have taken antihypertensive medications, which may have confounded results of ongoing studies. Beyond NASA, the clinical implications of this study for the general population are significant.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	Provide knowledge of prevention in bone loss due to old age.
Task Progress:	Last 12 months: • Institutional Review Board (IRB) approval received • Started recruitment and continuing recruitment • IRB continuing review approved • Received approval for “No cost extension” of the project - see following schedule for revised plan of action: Recruit subjects: August 2014-May 2015 Test subjects: September 2014-June 2015 Ship samples: June 2015 Sample/data analysis: June 2015-September 2015 Writeup: September 2015-October 2015
Bibliography Type:	Description: (Last Updated:)