



22nd IAA Humans in Space Symposium

11th – 14th November, 2019

Dubai, UAE

HIS 2019 Programme

Date	Time	Activities
Sunday Nov. 10	16:00 - 20:00	Registration
Monday Nov. 11	8:00 - 17:00	Registration
	Location: Astro Hall	
	9:00 - 9:30	HIS2019 Opening Ceremony Yousuf Hamad Al Shaibani – Director General (MBRSC), Jean-Michel Contant, Secretary General (IAA) Jean-Yves Le Gall, President (CNES)
	9:30 - 10:15	Plenary 1: The Journey of UAE’s First Human Spaceflight Mission <u>Moderator:</u> Saud Karmostaji <u>Panelists:</u> Hazzaa Al Mansoori (UAE Astronaut), Sultan Al Neyadi (UAE Backup Astronaut), Salem Al Marri (Programme Manager – UAE Astronauts Program) (MBRSC)

	10:15 – 10:45	Award Ceremony - UAE Astronauts Program Partners	
	COFFEE BREAK		
	11:00 - 11:45	Plenary 2: Selecting the UAE's First Astronaut: Challenges and Recommendations <u>Moderator:</u> Ayesha Al Mulla <u>Panelists:</u> Noora Al Rafi, Saeed Karmostaji, Mariam Al Zarouni (MBRSC)	
	11:45 - 12:30	Plenary 3: ISS Next Steps and Supporting Human Spaceflight in Emerging Nations <u>Moderator:</u> Mariam Al Zarouni <u>Panelists:</u> S. Krikalev (ROSCOSMOS), Sam Scimemi (NASA), Thomas Reiter (ESA), Remi Canton (CNES), Adnan Alrais (MBRSC)	
	LUNCH BREAK		
	13:30 - 15:00	Location: Astro Hall	Location: Mars Hall
		Cardio/Pulmonary 1	Radiation Impacts to Biological Systems 1
	COFFEE BREAK / INTERACTIVE PRESENTATION SESSION		
	15:30 - 17:00	Location: Astro Hall	Location: Mars Hall
		Cardio/Pulmonary 2	Radiation Impacts to Biological Systems 2
	17:00 - 19:00	Technical Tour: MBRSC	

Tuesday Nov. 12	8:00 - 17:00	Registration
	Location: Astro Hall	
	9:00 - 9:30	<p><u>MC:</u> Humaid Al Sharhan (MBRSC)</p> <p>Keynote Speech #1: UAE Mars Exploration Program – Emirates Mars Mission (9:00 – 9:15) <u>Speaker:</u> Maryam Al Shamsi, Director – Space Science (MBRSC)</p> <p>Keynote Speech #2: The human side of space exploration: Thales Alenia Space’s role in scouting the final frontier (9:15 – 9:30) <u>Speaker:</u> Provera Roberto (Thales Alenia Space)</p>
	9:30 - 10:15	<p>Plenary 4: Future Space Exploration/Lunar Gateway/Space Robotics <u>Moderator:</u> Fatma Lootah (MBRSC) <u>Panelists:</u> William H. Paloski (NASA/JSC), O. Kotov (IBMP), Maria Cristina (ASI), Grégory Pedersen (Airbus Defense and Space)</p>
	COFFEE BREAK	
	10:45 - 11:45	<p>Plenary 5: What does it take to be an Astronaut? (Astronaut and Cosmonauts Panel) <u>Moderator:</u> Mariam Al Zarouni (MBRSC) <u>Panelists:</u> Hazzaa Al Mansoori and Sultan Al Neyadi (MBRSC), O. Kotov (ROSCOSMOS), Aleksander Misurkin (ROSCOSMOS), Thomas Reiter (ESA)</p>
	11:45-12:30	<p>Plenary 6: <u>MC:</u> Humaid Al Sharhan (MBRSC)</p> <p>6.1 - The German Space Life Sciences Program - Benefit for People on Earth (11:45 – 12:05) Markus Braun</p> <p>6.2 - Building the global collaboration in space and on-the-ground life sciences: the NSSTC-UAEU-CNES-CNRS initiative (12:05 – 12:30)</p>

		Khaled Al Hashmi (UAE Space Agency)	
		LUNCH BREAK	
		Location: Astro Hall	Location: Mars Hall
	13:30 - 15:00	Spaceflight Analogs 1	OMICs
		COFFEE BREAK	
		Location: Astro Hall	Location: Mars Hall
	15:30 - 17:00	Spaceflight Analogs 2	SANS/VIIP
	17:00 - 20:00	Social Tour: Al Fahidi Historical Area	

Wednesday Nov. 13	8:00 - 17:00	Registration
	Location: Astro Hall	
	9:00 - 9:30	Keynote Speech #3: Overcoming Challenges to Human Health and Performance During Exploration Spaceflight Missions <u>MC:</u> Humaid Sharhan (MBRSC) <u>Speaker:</u> William H. Paloski (NASA)
	9:30 - 10:30	Plenary 7: <u>MC:</u> Humaid Al Sharhan (MBRSC) 7.1 - A strategic vision for the use of ISS and the lunar vicinity as human research analogs for future Mars missions (9:30 – 9:45) Julie A. Robinson, Sam Scimemi, Michael C. Waid, O.V. Kotov, William H. Paloski 7.2 - Russian psychophysiological space experiments aboard ISS for the benefit of interplanetary flights (9:45 – 10:00) V.Gushin 7.3 - Psychological and psychiatric aspects of a mission to mars (10:00 – 10:15) Nick Kanas 7.4 - ISRO's Human spaceflight programme: GAGANYAAN (10:15 – 10:30) U. Sreerekha (ISRO)
	COFFEE BREAK	
10:45 - 11:45	Plenary 8: <u>MC:</u> Humaid Al Sharhan (MBRSC) 8.1 - The Challenges of Space Medicine in the process of Deep Space Exploration (10:45 – 11:05) Yinghui Li	

		<p>8.2 - Long-Term Life Support Experiment for Survival on the Moon: 'Lunar Palace 365' (11:05 – 11:25) Hong Liu</p> <p>8.3 - The Chinese HSF Program and Future Plans (11:25 – 11:45) Prof.CHEN Shanguang (CNSA)</p>	
11:45 - 12:30		<p>Plenary 9: MC: Humaid Al Sharhan (MBRSC)</p> <p>9.1 - SANS (11:45 – 12:00) Steven Laurie</p> <p>9.2 - Enabling exploration and pioneering scientific discovery in the NASA Space Biology program (12:00 – 12:15) Craig Kundrot, Howard Levine, Kevin Sato, David Tomko</p> <p>9.3 – UAE’s National Space Strategy 2030 and Space Investment Promotion Plan (12:15 – 12:30) Sumaya Alhajeri (UAE Space Agency)</p>	
LUNCH BREAK			
13:30 - 15:00	Location: Astro Hall		Location: Mars Hall
	Neuroscience		Challenges for Future Spaceflight 1
COFFEE BREAK			
15:30 - 17:00	Location: Astro Hall		Location: Mars Hall
	Neuroscience		Challenges for Future Spaceflight 2
18:30 - 21:00	Gala Dinner		

Thursday Nov. 14	8:00 - 17:00	Registration		
	9:00 - 9:30	Location: Astro Hall		
		Plenary 10: <u>MC:</u> Humaid Al Sharhan (MBRSC)		
		10.1 - Human adaptation including sleep in extreme conditions and analog environments (9:00 – 9:15) Chrysoula Kourtidou-Papadeli		
	9:30 - 10:30	10.2 - Microbial safety of interplanetary missions: threads, risks and countermeasures (9:15 – 9:30) Ilyin V.K		
		Location: Astro Hall	Location: Mars Hall	
		Human Factor + Psych + Circadian	Multidisciplinary	
	COFFEE BREAK			
	10:45 - 12:30	Location: Astro Hall	Location: Mars Hall	
		Musculoskeletal	Spaceflight Immunology	
LUNCH BREAK				
13:30 - 15:00	Location: Astro Hall	Location: Mars Hall		
	Exercise and Countermeasures	Astrobiology		

Monday, Nov. 11:**Cardio/Pulmonary 1**

Chair: Satoshi Iwase

Co-Chair: Julia Popova

Rapporteur: Saba Al Heialy

Start	End	Title	Primary Author
13:30	13:45	Controlled Superficial Pressure to Assist the Circulatory System of Astronauts	Misael A. Chagas
13:45	14:00	Simulation of Cardiovascular Responses to Gravity Transitions in Suborbital Spaceflight by Successive Head Down and Up Tilting	Hasan Birol COTUK
14:00	14:15	Exploring the Impact(s) of Spaceflight Environment on the Astronaut's Vascular Function: A Joint Mohammed Bin Rashid Space Center and European Research Institutes Project	Adel Elmoselhi
14:15	14:30	Elucidating the Impact(s) of Hindlimb Unloading and Hypoxia on Vascular Function: A Joint Mohammed Bin Rashid Space Center and European Research Institutes Project	Nandu Goswami
14:30	14:45	Potential Long-Term Cardiovascular Health Risks of Spaceflight: Results from the Vascular Series and Future Directions	Richard L Hughson
14:45	15:00	MARSobserver for Intelligent Medical Cardiovascular Risk Assessment in Space and Extreme Environments on Earth	Benedikt Kessler

Monday, Nov. 11:**Radiation Impacts to Biological Systems 1**

Chair: Leticia Vega

Co-Chair: Honglu Wu

Rapporteur: Honglu Wu

		Title	Primary Author
13:30	13:45	Carcinogenesis Induced by Simulated Exposure to Space Particles	Weiwei Pei
13:45	14:00	Gamma Radiation Induced DNA lesions in Immunoglobuline Genes: A Pilot Study	Hao Ren
14:00	14:15	Bystander Effects Induced by Different LET Radiation in Human Astrocyte	Ziyin Zhang
14:15	14:30	Variation of Space Radiation Effects on Humans with Gender and Age	S. Sama
14:30	14:45	The Biological Effects in Different Brain Regions to Heavy Ion Irradiation	Peng Zhang
14:45	15:00	Evident Biological Effects of Space Radiation in Astronauts	Honglu Wu

Monday, Nov. 11:**Interactive Presentation**

Chair:

Co-Chair:

Rapporteur:

Time	Title	Primary Author
15 :00 – 15 :30	Comparative Analysis of G-Tolerance by Cosmonauts on the Stage of Return to Earth from Missions of Varying Duration	M.I. Koloteva, T.M. Glebova
	Characteristics of the accuracy of control of movements under microgravity conditions	Shigueva Tatiana A.
	Mathematical modeling of physical performance of cosmonauts on ISS – a step towards the system of countermeasures to negative effects of microgravity in missions to Moon and Mars	Anton V. Eremeev
	Non-24 h environmental periods lead to extensive alterations in physiology and decrease in adaptation	Huan Ma
	Motion sickness symptoms correlated with body temperature regulation in vestibular stimuli	Linjie Wang
	G-tolerance by russian cosmonauts and NASA astronaut on the phase of soyuz vehicle descent to earth after 340-day mission to the international space station	A.R. Kotovskaya, M.I. Koloteva, T.M. Glebova

Monday, Nov. 11:**Cardio/Pulmonary 2**

Chair: Satoshi Iwase

Co-Chair: Elena Luchitskaya

Rapporteur: Adel Al Moselhi

Start	End	Title	Primary Author
15:30	15:45	Cosmonauts' Lower Limbs Venae Condition in Long-Term Spaceflights and Definition of Possibility of Orthostatic Tolerance Forecast	Kotovskaya A.R., Fomina E.V., Salnikov A.V.

15:45	16:00	Simulated microgravity induces mitochondrial dysfunction and endoplasmic reticulum stress in rat cerebral arteries	Ran Zhang, Min Jiang
16:00	16:15	THE PHENOTYPE OF CEREBRAL VASCULAR SMOOTH MUSCLE CELL OF SIMULATED MICROGRAVITY RAT ARE REGULATED BY MITOCHONDIAL OXIDATIVE INJURY AND ENDOPLASMIC RETICULUM STRESS	Min Jiang, Ran Zhang, JiBin Zhang, and Feng Cao
16:15	16:30	EXPOSURE OF INSPIRATORY NEGATIVE PRESSURE BREATHING ON COSMONAUTS DURING SPACEFLIGHT	Julia A. Popova

Monday, Nov. 11:

Radiation Impacts to Biological Systems 2

Chair: Leticia Vega

Co-Chair: Honglu Wu

Rapporteur: Honglu Wu

Start	End	Title	Primary Author
15:30	15:45	Space Radiation Exposure Levels at Different Shielding Configurations	Vyacheslav A. Shurshakov
15:45	16:00	Measurements of Neutron Radiation on the International Space Station using Bubble Detectors: Matroshka-R and Radi-N2	Vyacheslav A. Shurshakov M.B. Smith
16:00	16:15	Outline of the Concept of Radiation Protection in Interplanetary Space Flight	Ushakov I.B.
16:15	16:30	Radiation Biological Effects and Detection by Biosensor	Hao Xiaoting, Cheng GuangQin, Madiha Rasheed, Deng Yulin, Zhang Yongqian

Tuesday, Nov. 12:**Spaceflight Analogs 1**

Chair: Leticia Vega
 Co-Chair: Gilles Clement
 Rapporteur: Adel Al Moselhi

Start	End	Title	Primary Author
13:30	13:45	Ground Analog Studies – first step of the space flights. Opportunities for cooperation	Tatiana Agaptseva
13:45	14:00	Moon landing simulation methodology. Construction of the wheeled robot and arm manipulator remote control model	Belousova M.D.
14:00	14:15	Results of the International Standard Measures during the VaPER Bed Rest Study	G. Clément
14:15	14:30	Moon landing simulation methodology	Gushin V.
14:30	14:45	UNOOSA Human Space Technology Initiative Activities Status in 2019	Aimin Niu
14 :45	15 :00	Two-week isolation experiments in Japan aerospace exploration agency (JAXA)'s isolation and confinement facility with the purpose of developing objective measurements of astronaut psychological status affected by stress	Go Suzuki, Natsuhiko Inoue, Satoshi Furukawa, Takashi Ohira, and Katsuhiko Ogata
15 :00	15 :15	Martian Medical Analogue and Research Simulation (2MARS): A New Opportunity for Training and Operational Research	Benjamin Easter, MD, MBA, Jay Lemery, MD, Dana Levin, MD, MPH, Richard Cole

Tuesday, Nov. 12:**OMICs**

Chair: L. Buravkova
 Co-Chair: R. Hemmersbach, Sergey Ponomarev
 Rapporteur: R. Hemmersbach

Start	End	Title	Primary Author
13:30	13:45	<i>Cellular studies under altered gravity conditions – from ground to space and vice versa. Germany.</i>	Ruth Hemmersbach, Jens Hauslage, Christian Liemersdorf, Kai Waißer,

			Aviseka Acharya, Agapios Sachinidis, Jens Jordan. Cellular
13:45	14:00	<i>The effect and molecular mechanism of space microgravity on osteogenic differentiation of human bone mesenchymal stem cells. China.</i>	Cui Zhang, Liang Li, Yuanda Jiang, Baoming Geng, Yanqiu Wang, Jinfu Wang.
14:00	14:15	<i>Transcriptomic profiles of mesenchymal cells of different commitment under simulated microgravity. Russia.</i>	Ratushnyy A.Yu., Yakubetz D.A., Zhivodernikov I.V., Buravkova L.B.
14:15	14:30	<i>Transcriptomics, NF-kB Pathway, and Their Potential Spaceflight-Related Health Consequences. USA. Jonson Space Center</i>	Honglu Wu, Maria Moreno-Villanueva, Ye Zhang.
14:30	14:45	<i>Intestinal microbiota contributes to altered glucose metabolism in simulated microgravity mouse model</i>	Qing Ge and Yifan Wang and Yongzhi Li
14:45	15:00	<i>Targeting mitochondria for preventing unloading-induced skeletal muscle atrophy and bone loss. China.</i>	Jiankang Liu, Jianguang Long.
15:00	15:15	The Effects of Simulated Microgravity on Calcium Signaling in Cardiomyocyte. China.	Yingxian Li, Guohui Zhong, Caizhi Liu, Shukuan Ling, Yuheng Li.
15 :15	15 :30	Protein signaling molecules and autonomic regulation of heart rate in cosmonauts.	Pastushkova L.H

Tuesday, Nov. 12:

Spaceflight Analogs 2

Chair: Vadim Gushin

Co-Chair: Leticia Vega

Rapporteur: Adel Al Moselhi

Start	End	Title	Primary Author
15:30	15:45	<i>Effects of dwarf fruit and vegetable crops on mood and sleep in closed environment</i>	Liu Huia
15:45	16:00	Interpersonal interaction and psychological stability of crewmembers under conditions of simulated interplanetary space flight (EXPERIMENT "SIRIUS-17")	V.I. Gushin
16:00	16:15	<i>Dynamics of changes of orthostatic stability under the influence of dry immersion</i>	Suvorov A.V.
16:15	16:30	21-day Dry Immersion: the specificity of the experiment and the first results	Tomilovskaya E.S.

Tuesday, Nov. 12:**SANS/VIIP**

Chair: Claudia Steaner

Co-Chair: Olga Manko

Rapporteur: Olga Manko

Start	End	Title	Primary Author
15:30	15:45	OCT-IMAGE ANALYSIS IN MONITORING OF THE OPTIC NERVE HEADIN COSMONAUTS ON THE INTERNATIONAL SPACE STATION	Makarov I.A.
15:45	16:00	Changes in ventricular volumes induced by spaceflight and correlations with visual acuity changes	Floris Wuyts
16:00	16:15	Diffusion-weighted MRI reveals reversible fluid redistribution in the brain after spaceflight	Steven Jillings/ Floris Wuyts
16:15	16:30	Eye optics study in experiments with dry immersion	Svetlana Dmitryeva
16:30	16:45	Hemo- and hydrodynamics of the eye under conditions of experimental g-force	Olga Manko
16:45	17:00	INFLUENCE OF THE FIVE-DAY "DRY" IMMERSION ON THE EYE HYDRODYNAMICS	Olga Manko
17:00	17:15	BIOMARKER OF ADAPTATION RESERVE OF VISUAL SENSORY SYSTEM	Sergey Danilichev

Wednesday, Nov. 13:**Neuroscience 1**

Chair: Chrysoula Kourtidou-Papadeli

Co-Chair: Elena Tomilovskaya

Rapporteur: Chrysoula Kourtidou-Papadeli

Start	End	Title	Primary Author
13:30	13:45	Brain Networks and Deep Learning Approaches for assessing the impact of microgravity and the efficacy of reactive sledge jumps countermeasure to sleep quality	Christos A, Frantzidis
13:45	14:00	Sleep Gene Expression in Simulated Microgravity Environment	Christiane M. Nday, Christos Frantzidis, Graham Jackson, Panagiotis Bamidis, and Chrysoula Kourtidou-Papadeli

14:00	14:15	Oxidative stress during long term bedrest and dynamic exercise countermeasure	A. Kyparos
14:15	14:30	A mixed reality platform for performing a combination of cognitive and physical training in space	George D. Ntakakis, Christina S. Plomariti, Christos A. Frantzidis, Panagiotis D. Bamidis, Chrysoula Kourtidou- Papadeli
14:30	14:45	Perception of Time and Distance in Microgravity	G. Clément
14 :45	15 :00	Identifying resting state networks alterations in light sleep due to microgravity conditions	Christina S. Plomariti

Wednesday, Nov. 13:

Challenges for Future Spaceflight 1

Chair: Klaus Slenzka

Co-Chair: Gushin V.

Rapporteur: Carine Platat

Start	End	Title	Primary Author
13:30	13:45	A bioinspired antimicrobial surface as preventive acting technology for space and Earth application	Matthias Dünne
13:45	14:00	Space debris mitigation and remediation as a key for sustainability in outer space	Grytsenko Iana
14:00	14:15	Style features in crews' communication with MCC	Gushin V.
14:15	14:30	Russian biomedical technologies for lunar manned missions: current status	A.P. Nechaev
14:30	14:45	Characteristics of natural colonization barriers of periodontium in dry immersion study	V.K.Ilyin
14 :45	15 :00	SUBORBITAL SPACEFLIGHT PRE-LAUNCH PHYSIOLOGICAL PRIMING FOR ENHANCED +G to 0-G SWITCHING TOLERANCE	Sebastien S. Murat

Wednesday, Nov. 13:**Neuroscience 2**

Chair: Chrysoula Kourtidou-Papadeli

Co-Chair: Floris Wuyts

Rapporteur: Chrysoula Kourtidou-Papadeli

Start	End	Title	Primary Author
15:30	15:45	The effect of long duration spaceflight on the brain and it's recovery as measured by voxel based morphometry	Floris Wuyts
15:45	16:00	Synaptic plasticity in rats hippocampus exposed in closed complex environment	Nuomin Li
16:00	16:15	Altered transgene expression is mediated by recombinant adeno-associated virus in human neuroglia and neurons under microgravity conditions	Feiyi Sun
16:15	16:30	Effects of simulated microgravity on p-gp expression and function in rat brain	Jingjing Guo
16:30	16:45	Different afferent systems as a trigger in modulation of the otolith-ocular reflex after long-term space flights	Dmitrii O. Glukhikh
16:45	17:00	Longitudinal modifications in functional brain connectivity after spaceflight	Steven Jillings
17:00	17:15	Dynamics Of Recovery Of Functional Capability After Long-Term Space Flights. Results Of Ongoing Experiment "Field Test"	Tomilovskaya E.S., Rukavishnikov I.V., Kofman I.S., Cherisano D.M., Kitov V.V., Lysova N.Yu., Osetskiy N.Yu, Rosenberg M., Grishin A.P., Fomina E.V., Reschke M.F., Kozlovskaya I.B.

Wednesday, Nov. 13:**Challenges for Future Spaceflight 2**

Chair: Claudia Stern

Co-Chair: V.Ilyin

Rapporteur: Carine Platat

Start	End	Title	Primary Author
15:30	15:45	Medical Selection of the First German Commercial Female Astronaut	Claudia Stern
15:45	16:00	Bioprinting rational for exploration missions	Klaus Slenzka

16:00	16:15	Towards the creation of a new medical control structure for future lunar expeditions	Strogonova
16:15	16:30	Ethological and philosophical viewpoint of humans in space: Past and future	Carole Tafforin
16:30	16:45	EXPERIMENTAL MOTION SICKNESS SUSCEPTIBILITY IN WOMEN AT DIFFERENT PHASES OF THE MENSTRUAL CYCLE APPLIED TO FUTURE SPACE FLIGHTS	MD, Professor E.I. MATSNEV
16:45	17:00	To space and back: changes in surfaces parameters and intracranial position of the brain after long-duration spaceflight	Peter zu Eulenburg
17:00	17:15	HUMAN METABOLIC DOWNREGULATION FOR GENERAL STRESS & 0-G TOLERANCE: (PRELIMINARY) PROOF-OF-CONCEPT EXPERIMENTS	Sebastien Murat

Thursday, Nov. 14:

Human Factor + Psych + Circadian

Chair: Nick Kanas

Co-Chair: Hanns-Christian Gunga

Rapporteur: Adel Al Moselhi

Start	End	Title	Primary Author
09:30	09:45	CIRCADIAN RHYTHM AND SLEEP DURING PROLONGED ANTARCTIC RESIDENCE AT CHINESE ZHONGSHAN STATION	Shiyong Liu
09:45	10:00	Application and test of Impact-adhesion mechanics in space microgravity	Qijun Jiang
10:00	10:15	A method of remote monitoring of the operator functional state in space flight CONDITIONS USING acoustic SPEECH ANALYSIS	Lebedeva S.
10:15	10:30	Communicative coping strategies and anxiety level in sirius-17 isolation experiment	Yusupova A.
10:30	10:45	Investigations of sleep quality in microgravity	E. Luchitskaya, I. Funtova, R. Baevsky
10:45	11:00	Body temperature regulation in humans on Earth and in space	Hanns-Christian Gunga

Thursday, Nov. 14:

Multidisciplinary

Chair: Alain Maillet

Co-Chair: Elena Luchitskaya

Rapporteur: Carine Platat

Start	End	Title	Primary Author
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09:30	09:45	NEW APPROACHES TO THE DEVELOPMENT OF MS AND PHD EDUCATIONAL PROGRAMS IN THE FIELD OF SPACE BIOLOGY AND MEDICINE	Buravkova L.B.
09:45	10:00	Human-centered human–robot natural spatial language interaction	Chengli Xiao
10:00	10:15	A convolutional neural network model for the identification of the instantaneous physiological state using camera images	Adil Deniz DURU
10:15	10:30	Research on pyrolysis technology of space trash artificially produced in long-duration space missions	Hui Jiang
10:30	10:45	ROLE FOR INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO) IN THE COMMERCIAL SUBORBITAL AND ORBITAL SPACE TOURISM: OPPORTUNITIES AND CHALLENGES	Vijay Kumar
10:45	11:00	Hygienic aspects of chemical safety of the air onboard manned spacecrafts during lunar missions	A.A. Pakhomova
11:00	11:15	Evaluation of an alternative solution for water microbial monitoring of fecal contaminants from water in the International Space Station	Thevenot Cecile
11:15	11:30	Integration of different methods of organic waste recycling for the organization of highly closed matter turnover in BTLSS	A.A. Tikhomirov,

Thursday, Nov. 14:

Musculoskeletal

Chair: Yinghui Li

Co-Chair: Rizwan Qaisar

Rapporteur: Adel Al Moselhi

Start	End	Title	Primary Author
10:45	11:00	Application of prosthesis accelerometers to restore controlled movements in microgravity conditions	Peter Anto Johnson
11:00	11:15	Disorder of iron metabolism inhibits the recovery of unloading-induced bone loss in hypomagnetic field	Yanru Xue
11:15	11:30	Targeting SR stress to mitigate disuse-induced muscle atrophy during stimulated microgravity	Rizwan Qaisar
11:30	11:45	Targeting mitochondria for preventing unloading-induced skeletal muscle atrophy and bone loss	Jiankang Liu
11:45	12:00	The protective effect of hemojuvelin on unloading muscle atrophy and its mechanism	Xiaoping Chen
12:00	12:15	Disuse Impairs the Mechanical Competence of Bone by Regulating the Characterizations of Mineralized Collagen Fibrils in Cortical Bone	Peng-Fei Yang, Xiao-Tong Nie, Zhe Wang, Hui-Yun Xu,

			Joern Rittweger, Peng Shang
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Thursday, Nov. 14:

Spaceflight Immunology

Chair: Alexander Chouker

Co-Chair: Sergey Ponomarev

Rapporteur: Saba Al Heialy

Start	End	Title	Primary Author
10:45	11:00	Stress Related Immune changes in long-duration missions – Can Intelligent Assistance be a countermeasure?	Judith-Irina Buchheim
11:00	11:15	Influence of rotation in different modes on the short radius centrifuge on the human immunity	Sergey Kalinin
11:15	11:30	Transcriptome analysis of human T cell response to long-term simulated microgravity	Kuznetsov N.V.
11:30	11:45	Condition of the human innate immunity system in the 21-days “dry” immersion	Sergey Ponomarev
11:45	12:00	A prototype device for cell research in space	Yu Chen

Thursday, Nov. 14:

Exercise & Countermeasures

Chair: Elena Fomina

Co-Chair: M.F. Reschke

Rapporteur: Adel Al Moselhi

Start	End	Title	Primary Author
13:30	13:45	Effect of short-arm centrifugation and exercise on skeletal muscle-pump baroreflex – Spin Your Thesis!	Brix B
13:45	14:00	Countermeasures for Vestibular and Sensorimotor Disturbances as NASA, Russia and Other International Space Flight Programs Prepare for Lengthy Missions	M.F. Reschke
14:00	14:15	"ECCENTRIC-BIASED TRAINING DOES NOT PREVENT BED REST-INDUCED OXIDATIVE STRESS	Dolopikou CF
14:15	14:30	Studies of the effects of various regimes of a short-radius centrifuge rotation on the dynamics of water-electrolyte metabolism markers and the fluids shifts in body regions	Galina Vassilieva
14:30	14:45	Ibmp Short-Arm Centrifuge: Goals And Expectations	O.I. Orlov
14:45	15:00	Anaerobic metabolism threshold as an indicator of changes in the level of physical	E. Fomina

	performance after space flight	
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Thursday, Nov. 14:

Astrobiology

Chair: Yulin Deng

Co-Chair: Klaus Slenzka

Rapporteur: Carine Platat

Start	End	Title	Primary Author
13:30	13:45	Evaluation of quantitative analysis method of microbial contamination from metal surface of China's space station	Cong-xin Xin
13:45	14:00	SPACE EXPERIMENT «TEST»	Ilyin V.K, Deshevaya E.A.
14:00	14:15	Study of p-glycoprotein in rat intestine under simulated microgravity effect	Huayan Liu
14:15	14:30	Study on drug metabolic enzymes in intestine of tail-suspended rats based on proteomics approach	Jingjing Guo
14:30	14:45	IDENTIFICATION OF SPACE QUALIFIED ACID TOLERANT MICROBES WITH POSSIBLE CAPACITY OF ALUMINUM CORROSION AND THE EVALUATION OF THEIR ACID PRODUCTION UNDER SPACE CONDITIONS	Rcheulishvili Nino
14:45	15:00	SIMULATED MICROGRAVITY EFFECT ON VAP-1/SSAO ACTIVITY IN STZ-INDUCED DIABETIC RATS WITH THE SIMULTANOUS ACTION OF PXS-4728A	Papukashvili Dimitri
15:00	15:15	EFFECT OF SPACE CONDITIONS ON CELLULOSE DEGRADAING ABILITY OF MICROORGANISMS	Yasmeen Shakir
15:15	15:30	The Expression of DNA Damage Repair Genes were changed on Arabidopsis thaliana Seeds Surviving 303h Exposure to Space Environment	Meng Zhang