



United Nations/Malaysia Expert Meeting on Human Space Technology

**14 – 18 November 2011
Putrajaya, Malaysia**

**Hosted by:
Institute of Space Science (ANGKASA), Universiti Kebangsaan Malaysia**

**Co-organised by
Canadian Space Agency (CSA), European Space Agency (ESA),
Japan Aerospace Exploration Agency (JAXA), National Aeronautics and Space Agency (NASA)
Russian Federal Space Agency (ROSCOSMOS)**

**In cooperation with
Astronautic Technology Sdn Bhd (ATSB[®]), National Space Agency of Malaysia (ANGKASA),
Universiti Malaysia Pahang (UMP)**

Programme

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(As of 4 November 2011)

**Venue of the Expert Meeting: Pullman Putrajaya Lakeside,
No.2, Jalan 5/5
Presint 5, 62200 Putrajaya
Malaysia**

Programme (Draft)
United Nations/Malaysia
Expert Meeting on Human Space Technology
Putrajaya, Malaysia, 14-18 November 2011

Honorary Committee (in alphabetical order):

- Prof. Dr. Mazlan Othman, Director, United Nations Office for Outer Space Affairs (UNOOSA)
- Prof. Tan Sri Dato' Wira Dr. Sharifah Hapsah Syed Hasan Shahabudin, Vice-Chancellor, Universiti Kebangsaan Malaysia (UKM)
- Dr. Keiji Tachikawa, President, Japan Aerospace Exploration Agency (JAXA)
- Prof. Dr.-Ing. Johann-Dietrich Wörner, Chairman of the Executive Board, German Aerospace Center (DLR)
- Dr. Liwei Yang, Deputy Director, China Manned Space Engineering Office (CMSEO)

Programme Committee (in alphabetical order):

- En. Mhd Fairos Asillam (National Space Agency of Malaysia (ANGKASA))
- Dr. Nicole Buckley (Canadian Space Agency)
- Ms. Ingrid Dietlein (UNOOSA)
- Dr. Takao Doi (UNOOSA)
- Dr. Tai Nakamura (Japan Aerospace Exploration Agency)
- Mr. Aimin Niu (UNOOSA)
- Dr. Julie Robinson (National Aeronautics and Space Administration)
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- Dr. Boris Zagreev (Russian Federal Space Agency)
- Dr. Martin Zell (European Space Agency)

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Co-Chairman: Prof. Dr.-Ing. Nik Abdullah Nik Mohamed, ANGKASA (UKM)

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Programme (Draft)

All session will be held at Room Putra 4 & 5, Pullman Putrajaya Lakeside unless otherwise stated

<i>Monday, 14 November 2011</i>	
<i>Morning</i>	
08:00	<u>Registration</u>
08:40	<u>Arrivals of VIP</u>
09:00	<u>Recital Prayer</u>
09:05	<u>Welcome Addresses</u> <ul style="list-style-type: none"> ○ Prof. Dr. Mohd. Alauddin Mohd. Ali, Director, Institute of Space Science (ANGKASA), UKM ○ Prof. Dr. Mazlan Othman, Director, United Nations Office for Outer Space Affairs (UNOOSA)
09:30	<u>Keynote Address by Dr. Mustafa Din Subari, Director General, National Space Agency of Malaysia (ANGKASA)</u>
<i>10:00</i>	<i>Photo Session, Morning Break</i>
10:30	<u>Commemoration of 50th Anniversary of Human Space Flight</u> <ul style="list-style-type: none"> ○ By Dr. Boris Zagreev, Russian Federal Space Agency (Roscosmos) ○ By Dr. Julie Robinson, National Aeronautics and Space Administration (NASA) ○ By Dr. Liwei Yang, China Manned Space Engineering Office (CMSEO) ○ By Dr. Nicole Buckley, Canadian Space Agency (CSA) ○ By Dr. Martin Zell, European Space Agency (ESA) [TBC] ○ By Dr. Tai Nakamura, Japan Aerospace Exploration Agency (JAXA)
12:20 [TBC]	<u>General Announcements</u>
<i>12:30</i>	<i>Lunch</i>

<i>Afternoon</i>		
14:00	<u>Introduction to the Human Space Technology Initiative</u>	
	<ul style="list-style-type: none"> ○ By Prof. Dr. Mazlan Othman, Director, UNOOSA ○ By Dr. Takao Doi, Head, United Nations Programme on Space Applications, UNOOSA 	
14:30	<u>Microgravity Science I (General Science)</u>	
	<i>Chairperson: Dr. Jack van Loon</i>	
	<i>Rapporteur: Ms. Farah Hani Abd Rahim</i>	
14:30	Fundamental Physics for and in Space	<i>Prof. Dr. Claus Kurt Oskar Lämmerzahl, ZARM, Germany</i>
14:50	Crystallization of Industrially Important Enzymes / Protein in Space	<i>Prof. Dr. Raja Nor Zaliha Raja Abd Rahman, UPM, Malaysia</i>
15:10	The Effects of Space Flight on Gene Expression Profiles of Enterobacter Cloacae	<i>Prof. Dr. Ramelah Mohamed, UKM, Malaysia</i>
15:30	An Affordable Access to Experiments on the ISS – Commercial Opportunities for Microgravity Research	<i>Dr. Peter Kern, Astrium Space Transportation, Germany</i>
15:50	<i>Tea Break</i>	
16:20	<u>Microgravity Science II (Life Science)</u>	
	<i>Chairperson: Prof. Dr. Alexander Horsch</i>	
	<i>Rapporteur: Ms. Farah Hani Abd Rahim</i>	
16:20	Microgravity Sciences and Space Biology at National Microgravity Laboratory in China	<i>Prof. Dr. Mian Long, Chinese Academy of Science, China</i>
16:40	Enhanced Inflammation and Endothelial Cell Activation in both Immediate and Revived Live Endothelial Cells Following Spaceflight Mission	<i>Prof. Dr. Hapizah Nawawi, UiTM, Malaysia</i>
17:00	Impact of Microgravity on The Expression of Multi-Drug Resistant Proteins and Membrane Transporter Genes in Jurkat Cells	<i>Prof. Dr. A. Rahman A. Jamal, UKM, Malaysia</i>
17:20	Manipulation of Gravity Using a Random Positioning Machine	<i>Dr. Jack van Loon, VU-University / ESA-ESTEC, The Netherlands</i>
17:40	<u>Introduction to Working Groups</u> (Organisational Aspects)	
18:00	<i>End of Day 1</i>	
20:00	<i>Reception Dinner and Opening Ceremony</i> <i>(Officiated by Prof. Tan Sri Dato' Wira Dr. Sharifah Hapsah Syed Hasan Shahabudin, Vice-Chancellor, Universiti Kebangsaan Malaysia (UKM))</i> <i>Hosted by the Institute of Space Science (ANGKASA), UKM</i>	

Tuesday, 15 November 2011

Morning

09:00	<u>International Space Station Programmes</u>	
	<i>Chairperson: Dr. Takao Doi</i> <i>Rapporteur: Ms. Rawaida Aifaa Ismail</i>	
09:00	The International Space Station: Canada's contribution and utilisation	<i>Dr. Nicole Buckley, CSA</i>
09:20	ISS Exploitation and Elips Programme	<i>Dr. Martin Zell, ESA</i>
09:40	JAXA's ISS/Kibo Utilization Program	<i>Dr. Tai Nakamura, JAXA</i>
10:00	US Research and Technology Development on the International Space Station	<i>Dr. Julie Robinson, NASA</i>
10:20	Program of Scientific and Applied Experiments on the ISS Russian Segment	<i>Dr. Boris Zagreev, Roscosmos</i>
<i>10:40</i>	<i>Morning Break</i>	
11:10	<u>National, Regional and International Space Programmes I</u>	
	<i>Chairperson: Dr. Tai Nakamura</i> <i>Rapporteur: Ms. Rawaida Aifaa Ismail</i>	
11:10	China's Manned Space Programme	<i>Dr. Liwei Yang, CMSEO</i>
11:40	JAXA Cooperation Activities with Asian Countries on Kibo/ISS Utilization through APRSAF	<i>Dr. Shigeki Kamigaichi, JAXA</i>
12:00	Activities of the Nigerian Space Agency and Prospects of Human Spaceflight Program	<i>Dr. Akeem Babatunde Rabi, National Space Research and Development Agency, Nigeria</i>
<i>12:20</i>	<i>Lunch</i>	
<i>Afternoon</i>		
14:00	<u>Education, Outreach & Capacity Building I</u>	
	<i>Chairperson: Prof. Dr. Mohd. Alauddin Mohd. Ali</i> <i>Rapporteur: Mr. Irwan Affendi Md. Naim</i>	
14:00	Presentation [TBD]	<i>Dr. Nicole Buckley, CSA</i>
14:20	JAXA Educational Activities on the ISS	<i>Dr. Tamotsu Nakano, JAXA</i>
14:40	US Educational Activities on the International Space Station	<i>Dr. Julie Robinson, NASA</i>
15:00	UNESCO's Science Education and Space Activities	<i>Dr. Masami Nakata, UNESCO</i>
15:20	Malaysia Education Programme in Commemoration of National "Angkasawan" Programme	<i>Mr. Mohd. Fairos Asillam, National Space Agency of Malaysia (ANGKASA), Malaysia</i>
<i>15:40</i>	<i>Tea Break</i>	

16:10	<u>Working Group Session I (plenary)</u> <i>Chairperson: Prof. Dr. Alexander Horsch</i> <i>Rapporteur: Ms. Ingrid Dietlein</i>	
	Human Space Technology Initiative (HSTI) Introduction: ISS Benefits for Humanity Missions by Dr. Julie Robinson, NASA	
17:20	<i>Short break</i>	
17:30	<u>Working Group Session II</u>	
	Microgravity Science (Room: Putra 4 & 5) <i>Chairperson:</i> <i>Dr. Jack van Loon</i> <i>Rapporteur: Ms. Farah Hani Abd Rahim</i>	Education, Outreach & Capacity Building (Room: Seri Bestari 2) <i>Chairperson:</i> <i>Prof. Datuk Dr. T. Subahan Mohd. Meerah</i> <i>Rapporteur: Mr. Irwan Affendi Md. Naim</i>
18:30	<i>End of day 2</i>	

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Wednesday, 16 November 2011

Morning

09:00	<u>National, Regional and International Space Programmes II</u>	
	<i>Chairperson: Prof. Dr. Claus Kurt Oskar Lämmerzahl</i> <i>Rapporteur: Ms. Rawaida Aifaa Ismail</i>	
09:00	Korean Astronaut Program Overview	<i>Dr. Soyeon Yi, Korea Aerospace Research Institute</i>
09:20	Space Technology Application Areas for Health in an Inclusive Global Information Society	<i>Prof. Dr. Alexander Horsch, Institute for Medical Statistics (IMSE), TU Munich, Germany</i>
09:40	Potential for Telemedicine and Telemetry in the Maldives	<i>Mr. Ahmed Shafeeq Moosa, The President's Office, Maldives</i>
10:00	Czech Space Activities Specialised to Human Spaceflights	<i>Mr. Michal Vaclavik, Czech Space Office, Czech Republic</i>
10:20	The National Strategy, Current Activities for Space Technology, Development and Application in Vietnam	<i>Dr. Lai Anh Khoi, Space Technology Institute (STI), Vietnam Academy of Science and Technology, Vietnam</i>
<i>10:40</i>	<i>Morning Break</i>	
11:10	<u>Education, Outreach & Capacity Building II</u>	
	<i>Chairperson: Mr. Mhd Fairos Asillam</i> <i>Rapporteur: Mr. Irwan Affendi Md. Naim</i>	
11:10	Research and Educational Opportunities in a Microgravity Environment for Developing Nations	<i>Dr. Ontonyo Eric Mangete, African Regional Centre for Space Science and Technology Education-English (ARCSSTE-E), Ile-Ife, Osun State, Nigeria</i>
11:30	Strategies for Implementation of Space Science and Technology Programmes for Developing Economies: Case Study of Ghana	<i>Dr. Shiloh Kwabena Dedeh Osae, Graduate School of Nuclear and Allied Sciences, University of Ghana, Ghana</i>
11:50	Building a Viable Capacity for Space Technology Development in Africa	<i>Prof. Paul Baki Olande, Kenya Polytechnic University College, Kenya</i>
12:10	Capacity Building in Space Technology Through Low Cost Programme Initiatives	<i>Mr. Mohammad Yousuf Khan, Pakistan Space & Upper Atmosphere Research Commission (SUPARCO), Pakistan</i>
<i>12:30</i>	<i>Lunch</i>	

<i>Afternoon</i>		
14:00	<u>Microgravity Science III (General Science)</u>	
	<i>Chairperson: Prof. Mian Long</i> <i>Rapporteur: Ms. Farah Hani Abd Rahim</i>	
14:00	20th Anniversary of Microgravity Experiments at the Drop Tower Bremen and 25th Anniversary of the Center of Applied Space Technology and Microgravity (ZARM)	<i>Dr. Thorben Koenemann, ZARM, Germany</i>
14:20	Microbes in Microgravity – Mechanism of Acinetobacter Baumannii Survival and Adaptation in Microgravity	<i>Prof. Dr. Sazaly Abu Bakar, UM, Malaysia</i>
14:40	Osteoblastic Cellular Functions during Space Flight	<i>Dr. Gabriele Anisah Froemming, UiTM, Malaysia</i>
15:00	HSTI Science Activities	<i>Mr. Aimin Niu, UNOOSA</i>
15:20	<i>Tea Break</i>	
15:50	<u>Working Group Session III (plenary)</u> <i>Chairperson: Prof. Dr. Alexander Horsch</i> <i>Rapporteur: Ms. Ingrid Dietlein</i>	
	Human Space Technology Initiative (HSTI)	
17:20	<i>Short break</i>	
17:30	<u>Working Group Session IV</u>	
	Microgravity Science (Room: Putra 4 & 5) <i>Chairperson: Dr. Jack van Loon</i> <i>Rapporteur: Ms. Farah Hani Abd Rahim</i>	Education, Outreach & Capacity Building (Room: Seri Bestari 2) <i>Chairperson: Prof. Datuk Dr. T. Subahan Mohd. Meerah</i> <i>Rapporteur: Mr. Irwan Affendi Md. Naim</i>
18:30	<i>End of day 3</i>	

Thursday, 17 November 2011

Morning

9:00	<u>National, Regional and International Space Programmes III</u>		
	Chairperson: Mrs. Zahira Mohd Radzi Rapporteur: Ms. Rawaida Aifaa Ismail		
9:00	Low Earth Orbit Spacecraft Formation Flying for Equatorial Missions from Orbital and Performance Measures Considerations	<i>Prof. Harijono Djodihardjo, UPM, Malaysia</i>	
9:20	Satellite Anomaly Information System (SIAS) for Identifying the Satellite Operation Disturbance	<i>Mr. Nizam Ahmad et al., Space Science Center (PUSSAINSA) – LAPAN, Indonesia</i>	
9:40	Space Programme of Pakistan and Possible Contribution in Human Space Technology Initiative (HSTI)	<i>Mr. Jawed Qureshi, Pakistan Space & Upper Atmosphere Research Commission (SUBARCO), Pakistan</i>	
10:00	Turkey's Space Endeavour: Brief Background and Possible Collaborations	<i>Dr. Celal Sami Tufekci, Yildiz Technical University, Turkey</i>	
10:20	The Phase I of the Space Seed for Asian Future 2010-2011 Program in Vietnam and the Lessons Learned	<i>Mr. Diep Huu Nguyen, Space Technology Institute, Vietnam Academy of Space & Technology, Vietnam</i>	
10:40	Morning Break		
11:10	<u>Working Group Session V</u>		
	Microgravity Science (Room: Putra 4&5) Chairperson: <i>Dr. Jack van Loon</i> Rapporteur: <i>Ms. Farah Hani Abd Rahim</i>	Education, Outreach & Capacity Building (Room: Seri Bestari 2) Chairperson: <i>Prof. Datuk Dr. T. Subahan Mohd. Meerah</i> Rapporteur: <i>Mr. Irwan Affendi Md. Naim</i>	Human Space Technology Initiative (HSTI) (Room: Seri Bestari 3) Chairperson: <i>Prof. Dr. Alexander Horsch</i> Rapporteur: <i>Ms. Ingrid Dietlein</i>
12:10	Lunch		
	Afternoon		
13:30	<u>Transfer from hotel to Planetarium</u>		
14:00	<u>Facility Tour and Astronauts Public Forum</u> Planetarium, Kuala Lumpur With participation of Astronauts: <ul style="list-style-type: none"> ○ Dr. Sheikh Muszaphar Shukor (Malaysia) ○ Dr. Liwei Yang (China) ○ Dr. Soyeon Yi (Republic of Korea) ○ Dr. Takao Doi (UNOOSA/Japan) 		
20:00	<u>Cultural Dinner (Saloma Bistro, Kuala Lumpur), hosted by Institute of Space Science (ANGKASA), UKM</u>		

Friday, 18 November 2011

Morning

09:00	<u>Joint Working Group Session</u> <i>Moderator: Dr. Takao Doi</i> <i>Rapporteur: Ms. Ingrid Dietlein</i> <i>Round Table Speakers:</i> <i>Prof. Dr. Mohd. Alauddin Mohd. Ali</i> <i>Prof. Dr. Alexander Horsch</i> <i>Dr. Jack van Loon</i> <i>Prof. Datuk Dr. T. Subahan Mohd. Meerah</i> <i>Dr. Akeem Babatunde Rabi</i> <i>Dr. Boris Zagreev</i>
<i>10:30</i>	<i>Morning Break</i>
11:30	<u>Wrap Up Session</u> <i>Chairperson: Dr. Takao Doi</i> <i>Rapporteur: Ms. Ingrid Dietlein</i> <ul style="list-style-type: none">○ Review of the Expert Meeting, approval of recommendations, and discussions of future activities <u>Closing Remarks</u>
<i>12:30</i>	<i>Adjourn</i>

Poster sessions scheduled during break time, 14 – 18 November 2011

Poster Session	Title	Author
PS-1 15 Nov. a.m.	Gene Expression Changes in Space Flown <i>Caenorhabditis Elegans</i> Exposed to a Long Period of Microgravity	R. Jamal (UKM), J. Nurul-Faizah (UKM), S. M. Then (UKM), S. Nathan (Malaysia Genome Institute), N. J. Szewczyk (University of Pittsburgh), L. S. Stodieck (Bioserve), R. Harun (UKM)
PS-1 15 Nov. a.m.	Changes In Gene Expression Of Hepg2 Cells Exposed To Microgravity	A. A. N. Khairul-Bariah (UKM), S. M. Then (UKM), R. Rageshwary (UKM), N. Fazlina (UKM), W. N. Wan-Zurinah (UKM), H. Roslan (UKM), D. M. Klaus (Bioserve & University of Colorado), L. S. Stodieck (Bioserve & University of Colorado), R. Jamal (UKM)
PS-1 15 Nov. a.m.	Protein and Gene Expression of Inflammation and Endothelial Activation by Endothelial Cells Cultured in Flat-Based Containers with VS, without Microcarries and Simulated Temperature Changes Associated with Space Travel	Muid S. (UiTM), Froemming GRA (UiTM), Manaf A. (UNISZA), Nawawi H. (UiTM)
PS -2 15 Nov. p.m.	Inflammation, Endothelial Activation and Apoptosis are not Effected by Short Term Simulated Microgravity in Endothelial Cells	Muid S. (UiTM), Gershovich J. (Institute of Biomedical Problems, Moscow, Russia), Froemming GRA. (UiTM), Manaf A. (UNISZA), Buravkova L. (Institute of Biomedical Problems, Moscow, Russia), Nawawi H. (UiTM)
PS -2 15 Nov. p.m.	Cellular Attachment and Cytoskeletal Changes in HepG2 Cells Grown in A 3-D Culture System in Space	R. Jamal (UKM), Tee, L. (Curtin Univ. of Technology), S. M. Then (UKM), A. A. N. Khairul-Bariah (UKM), N. Fazlina (UKM), R. Rageshwary (UKM), W. N. Wan-Zurinah (UKM), D. Klaus (Curtin Univ. of Technology), L. Stodieck (Bioserve), H. Roslan (UKM)
PS -2 15 Nov. p.m.	Structural Changes of The Endothelial Cells after Short Outer Space Flight	Kapitonova M. Yu. (UiTM) Muid S., (UiTM) Froemming G.R.A., (UiTM) Yusoff W.N.H., (UiTM) Othman S. (UiTM), Manaf A. (UNISZA), Nawawi H. (UiTM)
PS -3 16 Nov. a.m.	Influence of Non-Microgravity Stressors on Osteoblastic Markers during Launch, Spaceflight and Landing	Aisha M. D. (UiTM), Norita. S. (UiTM), Salina O. (UiTM), Nor-Ashikin M. N. K. (UiTM), Sharaniza A. R. (UiTM), Nawawi H. (UiTM), Kapitonova M. (UiTM), Froemming G. R. A. (UiTM)
PS -3 16 Nov. a.m.	Sustained Inflammation and Endothelial Activation in Revived Live Endothelial Cells Following Space Flight Travel	Muid S. (UiTM), Froemming G. R. A. (UiTM), Manaf A. (UNISZA), Nawawi H. (UiTM)
PS -4 16 Nov. p.m.	Academic and Research Strategies: Issues and Challenges	Prof. Anjana Narendra Vyas, CEPT University, India
PS -4 16 Nov. p.m.	Educating Astronomy before IYA and Now	Mr. Jayanta Acharya, Balmeeeki Campus, NSU, Nepal
PS -5 17 Nov. a.m.	Structural Changes of Normal Human Osteoblastic Cells During Space Flight	Kapitonova M. Yu. (UiTM), Salim N. (UiTM), Hafiz MK (UiTM), Shahir AR (UiTM), Nawawi MH (UiTM), Ali M. (Universiti Darul Iman), Froemming G. R. A. (UiTM)
PS -5 17 Nov. a.m.	Effect of Short Term Space Flight Mission on Osteoblast Cell Function Markers	Salim N (UiTM), Nawawi H (UiTM), Manaf A. (Universiti Darul Iman), Said MSM (UiTM) and Froemming GRA (UiTM)

**Hardware demonstration scheduled during break time,
14 – 18 November 2011:**

Hardware Demonstration	Title	Author
HD-1 15 Nov. a.m.	Demonstration of Random Positioning Machine [TBD]	<i>Dr. Jack van Loon, VU-University / ESA-ESTEC, Netherlands</i>
HD-2 16 Nov. a.m.	Development of a Life Science Experiment – A class room lecture with hardware demonstration	<i>Dr. Peter Kern, Astrium Space Transportation, Germany</i>

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