Tuesday, May 24, 2011

1645 Grounds
Mission X: Train like an astronaut

1655 Boese
Participatory engagement opportunities:
Are we sufficiently creative?

1705 Discussion

1730 Summary recommendations for future :envihab activities

1930 Conference dinner (Alter Wartesaal)

List of Chairs, Partners and Speakers (in alphabetical order)

Aeschbach, Daniel (Harvard Medical School)
Andreßen, Panja (German Aerospace Center DLR)
Angerer, Oliver (ESA)
Antuñano, Melchior J. (Federal Aviation Administration)
Baerwalde, Sven (German Aerospace Center DLR)
Bagdigian, Robert M. (NASA)
Basner, Mathias (University of Pennsylvania)
Berthier, Audrey (MEDES)
Binnewies, Jörg (German Armed Forces)
Blottner, Dieter (Charité Berlin Centre for Space Medicine)
Bräucker, Richard (German Aerospace Center DLR)
Boese, Andrea (German Aerospace Center DLR)
Curio, Gabriel (Charité Berlin Centre for Space Medicine)
Davis, Jeffrey R. (NASA)
Degen, Christi (Cologne Chamber of Commerce and Industry)
Dockter, Helmut (Federal State of North Rhine-Westphalia)
Elmenhorst, Eva-Maria (German Aerospace Center DLR)
Frey, Reiner (Bayer HealthCare AG)
Frings-Meuthen, Petra (German Aerospace Center DLR)
Gerzer, Rupert (German Aerospace Center DLR)
Gnoumou, Sayave (Nazounki Global Medical Network)
Gunga, Hanns-Christian (Charité Berlin Centre for Space Medicine)
Graßmann, Mariel (German Aerospace Center DLR)
Grounds, Dennis (NASA)
Hauslage, Jens (German Aerospace Center DLR)
Heiden, Wolfgang (Bonn-Rhine-Sieg University of Applied Sciences)
Hellweg, Christine (German Aerospace Center DLR)
Henn, Norbert (DLR Space Administration)
Ihne,Hartmut (Bonn-Rhine-Sieg University of Applied Sciences)
Johannes, Bernd (German Aerospace Center DLR)
Kanas, Nick (University of California San Fransisco)
Kebbekus, Bernd (BARMER)
Koch, Bernhard (German Aerospace Center DLR)

List of Chairs, Partners and Speakers (in alphabetical order)

Korb, Harald (Vitaphone GmbH)
Kübler, Ulrich (EADS Astrium)
Kunz, Dieter (Charité Berlin Centre for Space Medicine)
Laurini, Kathy (NASA)
Manzey, Dietrich (Technische Universität Berlin)
Molitor, Reimar (Regionale 2010)
Mukai, Chiaki (JAXA)
Olbert, Michael (EADS)
Paille, Christel (ESA)
Pawlik, Kurt (University of Hamburg)
Pöttgen, Uwe (Asklepios Hospitals)
Raatschen, Willigert (EADS Astrium)
Rettberg, Petra (German Aerospace Center DLR)
Russomano, Thais (Pontificia Universidade do Rio Grande do Sul)
Ruyters, Hans-Günter (German Aerospace Center DLR)
Sandrone, Silvio (EADS Astrium)
Schubert, Daniel (German Aerospace Center DLR)
Schurr, Ulrich (Forschungszentrum Jülich)
Slenzka, Klaus (OHB System AG)
Sundblad, Patrik (ESA)
Suvorov, Alexander V. (IBMP)
Thiele, Gerhard (European Space Policy Institute)
Tognini, Michel (ESA)
Trammer, Martin (German Aerospace Center DLR)
Watson, David Alan (National Space Biomedical Research Institute)
Wilde, Martina (German Aerospace Center DLR)
White, Ronald J. (South Dakota School of Mines and Technology)
Witsch, Petra (Federal State of North Rhine-Westphalia)
Wörner, Johann-Dietrich (German Aerospace Center DLR)
Zange, Jochen (German Aerospace Center DLR)
Zell, Martin (ESA)

Symposium Venue:

Cologne Chamber of Commerce and Industry
Unter Sachsenhausen 10-26
50667 Cologne, Germany

Conference Dinner:

Alter Wartesaal
Johannisstrasse 11
50668 Cologne, Germany

1st International **:envihab** Symposium Program

May 22-24, 2011
Cologne, Germany

DLR

Institute of Aerospace Medicine

www.envihab.org

Sunday, May 22, 2011

1700 Start of Registration

1800 Welcoming speech
Degen, Molitor, Gerzer
"Astrotalk" with astronaut Gerhard Thiele
Movie Regionale 2010

1900 Get-together

Monday, May 23, 2011

0800 Registration

0900 Welcome – Gerzer
Dockter, Molitor, Wörner

0930 -1030 **Session1:** :envihab: From hypothesis based research to innovative solutions
Chairs: Koch/Gerzer

0930 Gerzer
The :envihab strategy

0945 Discussion

0950 Rabbow
:envihab - The reasearch facility at the German Aerospace Center

1005 Discussion

1010 Ruyters
:envihab and the German Space life sciences program - Perspectives for exploration research

1025 Discussion

1030 *Coffee break and poster viewing*

1100 -1215 **Session2:** Closed environments
Chair: Angerer, Rapporteur: Rettberg

1100 Bagdigian
International Space Station life support and habitation and the challenges of human exploration

1110 Angerer
Examples of ESA's analogue activities and future perspectives

1120 Suvorov
MARS 500: Lessons to be learned for future closed environment research

Monday, May 23, 2011

1130 Rettberg
Closed environments and microbiology: Research challenges and application potential on Earth

1140 Schubert
New research initiative for greenhouse modules at the Institute of Space Systems

1150 Discussion

1215 *Lunch and poster viewing*

1345 - 1500 **Session3:** Life support systems for Space and Earth: From small model systems to human sustainment
Chair: Schurr, Rapporteur: Rabbow

1345 Schurr
The necessity of closed habitats to optimize bioregenerative cycles

1355 Paille
ESA ECLLS R&D: From independent sub-systems to closed loop system

1405 Raatschen, Slenzka & Henn
From physico-chemical and biological life support to sustainable space missions and resources minimization / effectiveness on Earth

1425 Hauslage
C.R.O.P. Combined regenerative organic food production

1435 Discussion

1500 *Coffee break and poster viewing*

1530 -1645 **Session4:** Environmental factors and human performance: Sleep, fatigue and work load
Chair: Curio, Rapporteur: Elmenhorst

1530 Aeschbach
Understanding sleep regulatory processes to improve waking performance

1540 Elmenhorst
Sleep in airplanes: Potential risk factors

1550 Kunz
Artificial light, performance and nighttime sleep

1600 Basner
Fitness-for-duty: A brief psychomotor vigilance test predicts sleep loss related decrements in simulated luggage screening performance

Monday, May 23, 2011

1610 Curio
Brain-machine interface: The potential of mobile EEG measurement

1620 Discussion

1645 *Coffee break and poster viewing*

1715 - 1830 **Session5:** Teamwork: Stress, monotony and other challenges
Chair: Pawlik, Rapporteur: Andreßen

1715 Kanas
Teamwork in Space: Challenges for crew resource management

1725 Olbert
Immersive simulation as a potential tool to reduce stress and monotony during Space travel

1735 Graßmann
PLASTA:Starting study campaigns on teamwork in :envihab

1745 Johannes
The psychological research concept for :envihab – "Digital Friend" and „Recreation Room" – medical-psychological support during long-term space missions beyond the earth orbit

1755 Binnewies
Fatigue management in military air traffic

1805 Discussion

1930 Poster party and poster prize (:envihab-Prize 2011)

Tuesday, May 24, 2011

0830 -0945 **Session6:** The quest for standardization in human physiology studies
Chair: Frey, Rapporteur: Frings-Meuthen

0830 Sundblad
ICM: Standardizing studies in Space physiology

0840 Frings-Meuthen
ISS Experiment Solo: Sodium load in microgravity

0850 Frey
From molecular research towards new drugs: example Riociguat

0900 Berthier
Data management and integration in complex studies

Tuesday, May 24, 2011

0910 White
Mathematical modeling and experimentation: From verification to prediction

0920 Discussion

0945 -1100 **Session7:** Weightlessness, inactivity and immobilisation: Challenges for Space and Earth
Chair: Sundblad, Rapporteur: Rittweger

0945 Blottner
Molecular monitoring and structural analysis of human skeletal muscle after whole body decon-ditioning and countermeasures

0955 Russomano
The establishment of a Space life science center in Brazil: Its ups and downs

1005 Rittweger
Activity and mobility: Challenges by secular trends

1015 Zange
Leg muscle training under "artificial gravity" conditions: The challenge of finding the optimum for muscle activity, mechanical loading and perfusion

1025 Gunga
Heat sensing: Applications in Space and on Earth

1035 Discussion

1100 *Coffee break and poster viewing*

1130 -1245 **Session8:** From telemedicine to personalized healthcare: How smart technologies help to maintain health, mobility and quality of life
Chair: Pöttgen, Rapporteur: Lindlar

1130 Gnoumou
Telemedicine needs for African Sub-Saharan countries

1140 Heiden
Augmented perception for diagnosis and orientation support

1150 Pöttgen
How to assist healthy people to stay healthy

1200 Korb
Telemonitoring to support health and maintain quality of life

Tuesday, May 24, 2011

1210 Lindlar
DLR-Plug&Care-Connector: A middleware to permit platform independent medical (tele-)assistance on your smart phone or PC

1220 Discussion

1245 *Lunch break and poster viewing*

1400 Round table with :envihab partners
Moderation: Gerzer
Pöttgen, Asklepios
Kebbekus, Barmer
Ihne, Bonn-Rhine-Sieg University of Applied Sciences
Kübler, EADS Astrium
Watson, NSBRI

1445 -1545 **Session9:** Private human Spaceflight: Preparing for a new era
Chair: Antuñano, Rapporteur: Kluge

1445 Antuñano
Commercial human Spaceflight update

1455 Trammer
Medicals for Space tourists: Is a JAR-medical for private pilots sufficient?

1505 Sandrone
Private human Spaceflight: A new global market for the space industry?

1515 Baerwalde
Short arm human centrifuges: Applications for Space and Earth

1525 Discussion

1545 Coffee break and poster viewing

1615 -1730 **Session10:** Education and outreach: Raising awareness and engagement of the next generation and the general public for human Spaceflight
Chair: Mukai, Rapporteur: Boese

1615 Bräucker
The DLR School Labs: A success story

1625 Hellweg
SpaceLife: An international PhD program

1635 Mukai
Outreach programs in Japan: Space life science research for helping people on Earth