IAA Commission 2 on Space Life Sciences and
IAF Technical Committee on Space Life Sciences
Joint Meeting
Toronto, Canada

Minutes

Monday, September 29, 2014.

Participants:
Peter Graef (DLR) – co-chair
Patrik Sundblad (SAPC) – co-chair
Kim Binsted (Univ of Hawaii)
Cora Thiel (UZH)
Oliver Ullrich (UZH)
Liliana Layer (UZH)
Helen Habernickel (Elsevier)
Ulrich Kuebler (Airbus DS)
Achim Schwarzwälder (Airbus DS)
Laurence Young (MIT)
Rupert Gerzer (DLR)
Nick Kanas (UCFS)
Klaus Slenzka (OHB)
Petra Rettberg (DLR)
Gerda Hornbeck (DLR)
Jeffrey R. Davis (NASA)
Oliver Oratz (Charité)
Zhuang Fengyuang (Beihang Univ.)
Jan Kolar (CSO)
John D. Rummel (ECU)
Nicole Buckley (CSA)
Peter Hofmann (OHB)
Satoshi Iwase (Aichi Med U.)
Gerrit Hausmann (OHB)
Chiaki Mukai (JAXA)
Marlene MacLeish (NSBRI/NASA)

Welcome and Introduction

P. Sundblad and P. Graef welcomed the large number of participants, with a special welcome to new members. After round-table presentations, P. Graef explained the background of having joint life science meetings between IAF and IAA, and how the interaction works. The objective to foster life science is similar to both the IAA Commission 2 and the IAF space life science technical committee, and there is obvious gains coupled to this cooperation also giving the members more flexibility in implementing new activities.

Report from Council of Trustees (R. Gerzer) and SAC (P. Sundblad):
More members are needed in Section 3, hence IAA members are encouraged to nominate new persons. Especially nominee’s from U.S.A is welcomed because of the currently low number of Americans.

Study group reports are available for electronic download, which is free for IAA members. It was suggested that the reports should be available for free download for everyone, and that the paper reports should be discontinued. This was put forward in both SAC and the council of trustees, and the IAA Office will look into the feasibility and decide on the way forward before the spring meeting next year.

20th Humans in Space in Prague

J. Kolar presented the general set-up and the current status. The website is on-line (his2015.com) and a meeting leaflet has been printed (will be distributed also at the IAC in Toronto). The 2nd announcement will be released in October with a deadline for abstracts in February 2015. The science committee has been formed and will be responsible for the review of abstracts and for producing the final program, including assigning co-chairs and rapporteurs for each session. This will also encompass decision on scientific plenary sessions based on invited speakers.

Status of study groups (P. Sundblad):

- SG 2.8 e-Learning and Space Life Sciences (Ch. Kourtidou/G. Horneck) – The study is completed, the final document prepared and the review process is completed.

- SG 2.9 International Standards for Bed Rest Studies (P. Sundblad/O. Orlov) – The study is completed, the final document prepared and the publication process is starting now. IBMP will sponsor the publication.

- SG 2.10 International Cooperation for Space Exploration Knowledge Sharing (MacLeish/White) - The study is completed and the report is printed.

- SG 2.12 Effectiveness of different physiological countermeasures to spaceflight deconditioning (J. Charles/I. Kozlovskaya) - The following new members have been added to the group: Jon Scott, Lena Norrbrand, Ronita Cromwell. Four meetings were organized. A draft of the Study Group report will be presented at the Humans in Space meeting in mid-2015.

- SG 2.13 Space Life Sciences in the Exploration Era (R. Gerzer/R. White) - Study Group was renamed into “Space Life Sciences, Physiology and Medicine in the Exploration Era: The IAA Virtual Institute of Space Life Sciences, Physiology and Medicine”, the number of chairs and the secretary of the study were adapted (Study group chair - Rupert Gerzer; Study Group Co-Chairs - Oleg Orlov, Jeffrey Davis, Ying-Hui Li, Chiaki Mukai; Study Group Secretary - Peter Graef; Other Members - Ronald J. White). Position Paper will be submitted to IAA in the end of 2014.

This Virtual Institute will report to the IAA Director of Human Spaceflight, however it was unclear at the meeting what the terms of reference are for this Director, and how he was appointed.
• SG 2.14 Medical Support for an International Human Expedition to Mars (O. Orlov/J. Davis) – proceeding according to plan.

**Study Groups from other commissions (Fengyuan Zhuang)**

- SG 3.23 Human Space Technology Pilot Projects with Developing Countries (G. Reibaldi / Fengyuan Zhuang)
- SG 4.17 Space technology development for biomedical research – (P. Sundblad) – this SG was presented at SAC and given the topic it was agreed that Commission 2 should be involved.
- SG 1.5 Particle Radiation Hazards en route to, and in orbit about, Mars – G. Horneck brought the point that this report is highly relevant for Commission 2.
- SG 3.20 Expanding Options for Implementing Planetary Protection during Human Space Exploration – J. Rummel indicated that the scope of this SG should be of interest for our commission as well.

**New Study Groups**

- Immersion Model: Importance for Space Life Science Studies (O. Orlov) – proposal received and will be forwarded to the IAA Office.
- Space adaptation biomarkers (Ch. Kourtidou-Papadeli) – status unknown
- Data sharing coupled to ground-based human research (P. Sundblad) – the discussion will continue in the International Countermeasure Research WG on how to focus this study group. This is to some extent dependent on how the International data sharing effort coupled to ISS efforts proceed, e.g. to what extent that set-up can also benefit ground-based research.

**Humans in Space Symposium 2017 (P. Sundblad)**

The IAA Office will release a call in Oct-Nov, with a deadline in end-January 2015. The commission should be ready to review proposals; a decision will be made at the Spring-meeting 2015, with official announcement of the assignment at Humans in Space in Prague.


Due to restricted travel budgets in many countries and the problems with obtaining VISAs (for Russian citizens) there have been a large number of withdrawn presentations. In addition there have been a trend towards less abstract submissions in the last 2-3 years. There was a discussion on the underlying reasons and ways to counteract this trend. IAC is competing with other life science meetings and is relatively small and very expensive in comparison. In order to minimize the number of withdrawn oral presentation it was suggested to accept with a “margin” or alternatively to have a readiness to move good poster presentations to oral presentations. In order to increase the number of abstract one option might be to decrease the registration fee for 1st authors.

**Life Science sessions at IAC 2015 (P. Graef)**

The program is in place and co-chairs and rapporteurs assigned. The abstract review will be streamlined this time, with an update of the on-line review system (reported at the IPC meeting), and as usual the final scoring and assignments to oral or poster will take place at the spring
meeting in Paris. Proposals for Plenary sessions should be submitted before the Spring meeting, if possible.

**New Journal by Elsevier (Helen Habernickel)**

H.Habernickel (Elsevier) and R.Gerzer proposed “Reviews in Aerospace Life and Medical Sciences” (ReALMS), an international reviews journal covering the whole field of life sciences and medicine in aeronautics and space allowing readers from universities, research establishments, industry and politics comprehensive overviews over the whole field of aerospace life sciences. The Editorial Board - Rupert Gerzer, DLR Germany, Jeffrey Davis, NASA, USA, Oleg Orlov, IMBP, Russia, and Yinghui Li, Chinese Astronaut Centre, China will recruit review articles from Western Europe and Africa, from North and South America, from Russia and Eastern Europe, and from Asia, respectively.

The proposed journal will close three gaps that are currently present in the field of aerospace life sciences and medicine: There is no single journal available that would cover the whole field of aerospace life and medical sciences, there is currently no high impact factor journal, and there is no journal that currently publishes review articles on the latest developments written by the respective leaders in their fields.

The journal will accept submissions related to space and aeronautics that might not “fit” into a strictly life science or medical journal. The Editorial Team consists of globally well-known leaders in their field who are able to motivate other leaders to contribute excellent review articles to the journal.

In view of the proposal and the respective discussion during the joint meeting, IAA Commission 2 on Space Life Sciences and IAF Technical Committee on Space Life Sciences strongly recommend affiliation of this new journal with IAA and IAF.

**IAA/IAF – UN-OOSA (N. Buckley)**

UN-OOSA typically meets in conjunction to IAC Congresses, and currently they are elaborating on life science related issues like tele-epidemiology, tele-medicine, and personalized medicine. It was proposed that we should start to interact with this group, and as a first step a proposal for a joint Plenary session at IAC in Jerusalem will be drafted. N. Buckley is taking the lead, with subsequent involvement of Commission 2, maybe also in cooperation with other IAA groups.

**Upcoming meeting (P. Graef)**

The meeting schedule for 2015 was presented, with the Spring meeting in Paris in the week of March 23rd and the Humans in Space Symposium in Prague as given highlights.

This well attended meeting was held in a friendly and constructive atmosphere.
IAA COMMISSION 2 on Space Life Sciences and IAF Technical Committee on Space Life Sciences
Joint Meeting

Monday, September 29, 2014
12:00 - 15:00

Room 802a, South Building,
Metro Toronto Convention Centre,
222 Bremner Boulevard, Toronto, Ontario M5V 3L9
Canada

Co-Chairs – P. Sundblad/P. Graef

Agenda

1. Welcome & Introductions (P. Sundblad/P. Graef)

2. Study Group Proposals/Activities

2.1. Ongoing study groups
   SG 2.8, 2.9, 2.10, 2.11, 2.12, and 2.13 (P. Sundblad)

2.2. Discussion of new proposals
   - The IAA Virtual Institute of Space Life Sciences, Physiology and Medicine (R. Gerzer)
   - International Standards for Dry Immersion Studies (P. Sundblad)
   - Space adaptation markers (Ch. Kourtidou-Papadeli)
   - Data sharing. Procedure recommendations for analog experiments (P. Sundblad)

2.3. Introduction on Study Groups from other commissions (Fengyuan Zhuang)
   - SG 3.23 Human Space Technology Pilot Projects with Developing Countries (G. Reibaldi/Fengyuan Zhuang)
   - SG 6.16 STEM/STEAM for Space. Grand Challenges (Liya Regel)
   - SG 4.17 Space technology development for biomedical research – (P. Sundblad)

3. Preparations for the 20th Human in Space Symposium in 2015 (J. Kolar)

   4.1. Space Life Sciences Symposium (A.1)
   4.2. Plenary Sessions


6. Preparation Activities (P. Graef)
   A1 Space Life Sciences Symposium for 66th IAC in Jerusalem, Israel 2015

7. New conference proposals (P. Sundblad)
   21th Human in Space Symposium in 2017

8. Cooperation between the IAA-IAF SLS and UN-OOSA (N. Buckley)
9. Report from SAC (P. Sundblad)
9. Next Meeting and Work between Meetings

10. Other Business TBD.