

5th iLEAPS Open Science Conference

The 5th iLEAPS International Science Conference was held at the Saïd Business School, University of Oxford between the 11th and 14th September 2017. The conference was preceded by an iLEAPS Early Career Scientist Workshop (9th-10th September) and followed by a meeting of the iLEAPS Scientific Steering Committee (15th-16th September).

A total of 273 delegates attended the conference from 36 countries (see map).



Prof Mark Bailey, Director of CEH, gave the opening address and warmly welcomed delegates to Oxford. He was followed by Dr Thorsten Keifer of Future Earth and Dr Judith Hoelzemann of iLEAPS' sister global research programme on International Global Atmospheric Chemistry (IGAC).

Our invited plenary speakers were Prof David Fowler (CEH, UK), Prof Sonia Seneviratne (ETH, Switzerland), Prof Yadvinder Malhi (University of Oxford, UK) and Prof Paulo Artaxo (University of São Paulo, Brazil). We are extremely grateful to Yadvinder Malhi, who stepped in to replace one of the plenary speakers (Dr Akilesh Gupta, India) at short notice.

We thank the members of the Conference organising committee and our Conference Managers, Archer Yates Associates, who all contributed to delivering a very successful conference.

- Dr Eleanor Blyth (CEH, UK and iLEAPS SSC co-Chair)
- Prof Hans-Christen Hansson (Stockholm University, Sweden and iLEAPS SSC co-Chair)
- Prof Allison Steiner (University of Michigan, USA and iLEAPS SSC)
- Dr Kirsti Ashworth (University of Lancaster, UK and Chair of iLEAPS Early Career Scientist Network)
- Dr Garry Hayman (CEH, UK and iLEAPS IPO)
- Dr Toby Marthews (CEH, UK)

Science Programme

In contrast to previous iLEAPS conferences, the science programme was organised in 3 parallel sessions, with a total of 20 topics covering the breadth of iLEAPS science.

- A1: Land-use change in a warming world: interactions between climate and socio-ecological systems, and implications for land-based climate change mitigation
- A2: The global nitrogen cycle: quantifying and modelling the flow of nitrogen through the land-atmosphere system
- A3: The role of soils in the global environmental change
- A4: Impacts of fire on land and atmosphere
- B1: Ozone-vegetation interactions and effects on ecosystems, agriculture and climate
- B2: Changing water cycle in the food baskets of the world (joint session with GEWEX)
- B3: Canopy Processes and Deposition
- B4: Interaction of urban air quality and ecosystems
- C1: Impact of extremes on land-atmosphere biogeochemical cycling
- C2: Thawing permafrost carbon: a challenge for climate science
- C3: Understanding the response of terrestrial ecosystems to climate change and rising atmospheric CO₂ concentrations
- C4: Dryland ecosystems: New modelling and measurement challenges
- D1: Methane from wetlands, lakes and thawing permafrost
- D2: Measuring and modelling biogenic volatile organic compounds (BVOCs)
- D3: Impact of aerosol emissions on clouds and precipitation
- D4: Where are the greatest uncertainties in the Global terrestrial Carbon Budgets?
- E1: Land-atmosphere processes and agricultural transformation in Africa
- E2: iLEAPS Asia: Land-atmosphere research in Asia: From air pollution to climate change
- E3: Confronting land models with data for assessment and verification.
- E4/E5: Ground-based and Earth observations for ecosystem-atmosphere interactions

We would like to thank the convenors for promoting their sessions, organising the science programme for and chairing their sessions.

A number of side events were also held during the conference:

- Earth System Data Cube (led by Miguel Mahecha and Fabian Gans, MPI-Jena)
- CANEXMIP (led by Laurens Ganzeveld, Wageningen University)
- LS3MIP (led by Sonia Seneviratne, ETH Zurich and Richard Ellis, CEH)

We are intending to make the oral and poster presentations available on the iLEAPS website for those authors who agree to do so. If you have not yet replied to the earlier request and would like to make your presentation available, please send an e-mail to ipo@ileaps.org giving your permission to publish. We need the author's explicit permission under new UK data protection regulations.

Early Career Scientist Workshop

The Early Career Scientist (ECS) workshop was held at St. Anne's College in Oxford over the weekend preceding the iLEAPS conference. The workshop focussed on developing communication skills in science and was attended by 32 Early Career Scientists from around the world.



Prof Joshua Schimel (University of California Santa Barbara), author of "Writing Science: How to write papers that get cited and proposals that get funded", led the first day covering written communication. Attendees were invited to bring their own manuscripts or proposals such that the new skills could be applied directly to their research. The second day focussed on oral communication and outreach. It was led by Dr Emma Sayer and Ali Birkett

(University of Lancaster). Here attendees gained valuable skills in selling their science to a variety of audiences such as school children and news media outlets (as part of outreach events) to the more traditional academic setting of international science conferences and meetings.

Some of those attending the workshop gave a collective demonstration of the lessons learnt on the first day of the conference. Some key messages for oral and written material were:

- Pitching it right: Catch your audience with a hook, avoid jargon and use the "power of 3"
- Writing a masterpiece: Tell a story, fearless first draft and use short, sharp sentences

Finally, we were very sorry that Dr Kirsti Ashworth, the current chair of the ECS network, was unable to attend the conference and workshop because of ill health. We are pleased to report that Kirsti is back in action. We thank her for her help in organising the ECS workshop. She was missed.

Early Career Scientist Bursaries

The iLEAPS International Project Office offered a limited number of bursaries to Early Career Scientists to attend the ECS workshop and conference. We were very pleased to cover the conference registration for 14 ECSs from developing countries and the travel & accommodation costs of 3 of these Early Career scientists (Saraswati Shrestha, Nepal; François Xavier Nshimiyimana and Gabriel Habiyaemye, Rwanda).

Early Career Scientist Awards

The ECS committee held a competition for the best conference oral and poster presentations by Early Career Scientists. We are pleased to announce that **Saadatu Baba** and **Maria Praß** won the awards for best oral and best poster presentations, respectively.

Saadatu Baba (Kaduna State University, Nigeria): Climate Change Adaptation in Northern Nigeria (Oral, Session A1).

"It's been said that climate change presents an unfair paradox in Africa; it



contributes least to global carbon emissions, but its people are already feeling the impacts of climate change, and will be among the most affected globally. My research is on climate change adaptation among rural smallholder farmers in northern Nigeria. Smallholder farmers are the mainstay of food security in Nigeria but are often underappreciated. I use participatory methods in my research and am currently assessing the social vulnerability and adaptation options of 20 households in a rural Kaduna farming community.

At the iLEAPS conference, I was intrigued by many of the presentations using modelling to produce climate change projections, and a considerable number of them were on West Africa. I would like to learn modelling, use it to understand food production and food security, and apply it to climate change adaptation. I would also like to write and publish more, and the early career workshop I attended at the start of the conference has given me the incentive to overcome my reluctance to write. One of the lessons I also learnt was to tell a compelling story with your research, and I guess this award means that I did."



Maria Praß (Max-Planck Institut für Chemie, Mainz, Germany): "Fluorescence in situ hybridization as molecular genetic analysis method for bioaerosols in ambient air samples" (Poster, Session E4/E5)

"Approximately 0.1–1 μg DNA enters our lungs each day by inhaling biological aerosols, such as spores, pollen, bacterial cells, and others, suspended in ambient air in urban regions. This amount of genetic information is equivalent to $\sim 10^4$ – 10^5 human genomes! A number so high it makes me think about the impact of these so called bioaerosols on human, animal, and plant health by the spread of diseases. Furthermore, these particles can influence physical and chemical key processes in the atmosphere, which is particularly relevant in the hydrological cycle. As a biologist at the Max-Planck Institute for Chemistry in Mainz, I am part of a team that studies the dynamic life cycle of bioaerosols at the interphase between biosphere and atmosphere. To do so, I collected aerosol samples at different regions, e.g. in the nearly pristine tropical rainforest

in Brazil. By applying of a molecular genetic method, the Fluorescence In Situ Hybridization, I can contribute my biological background to investigate the role bioaerosols play in human and plant health as well as in atmospheric science. A topic that must not be underestimated, especially in times of progressing anthropogenic influence on ecosystems like rainforests and consequently on bioaerosol composition."

Our congratulations to Saabatu and Maria.

Social Programme

The conference icebreaker was held on Sunday, 10th September at the University of Oxford's Natural History Museum. With canapés and drinks, the 100 delegates, who attended, had the opportunity to meet and to view the exhibits on display.



The conference dinner was held in Oxford's Town Hall on Wednesday, 13th September. The dinner was followed by a ceilidh/dancing.



Post-Conference Survey and Evaluation

We invited conference delegates to complete a post-conference survey. We had 102 responses. The great news is that 92% of the responses confirmed that the conference had been a success, "Good that iLEAPS is back" and compared favourably to other

International Conferences “*The conference was very well organised and had an interesting and wide range of speakers*”. The science programme and the decision to run parallel sessions were well received. Figures 1 & 2 gives an overview of the responses per correspondent.

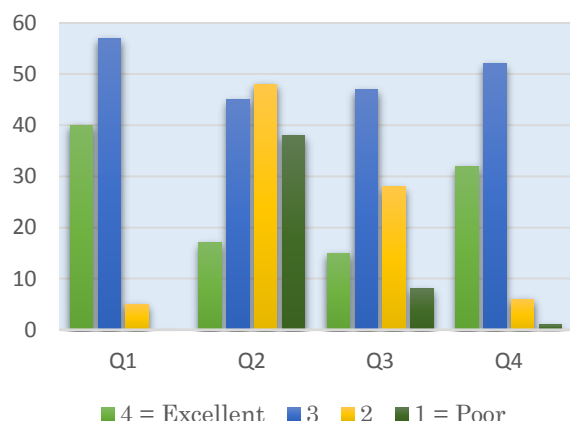


Fig 1. Post conference evaluation - Number of responses to questions: (Q.1) Overall assessment of the meeting; (Q.2) Overall assessment of the catering; (Q.3) Overall assessment of value for money and (Q.4) Overall assessment of the 5th iLEAPS Science Conference compared to other International conferences.

89% of the delegates who responded, felt that the venue was good or excellent. There were however access issues to the lecture rooms. “*Please complain to the Saïd Business School about the way the doors needed swipe access*” “*Access to the lecture theatres could have been easier*”. Representations were made at the time and this information has also been passed on in the feedback to the Saïd Business

School. The Saïd Business School replied that the security system is needed because of its proximity to the rail network and city centre, but that it would look into ways of streamlining the system for future conferences and delegates.

56% of the delegates felt that the catering at the conference fell below expectations, particularly at the Conference Dinner. We apologise for this and the feedback has been given to the catering companies involved. These issues will be considered going forward for any future events.

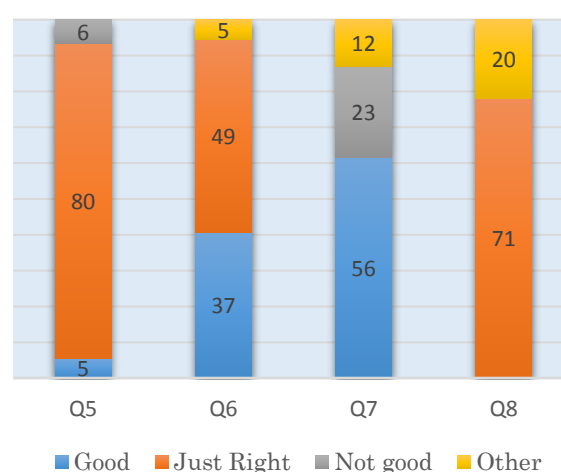


Fig 2. Post conference evaluation – Number of response to questions: (Q.5) How did you find the range of subjects covered at the conference? (Q.6) How did you find the ratio of posters to oral presentations? (Q.7) Did you like the programme run as 3 parallel Sessions? (Q.8) How did you find the ratio of posters to oral presentations?

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