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Flying to conferences creates a large carbon footprint.

VIRTUAL SCIENCE CONFERENCE TRIES TO RECREATE SOCIAL BUZZ

Psychologists assessed interaction at a meeting broadcast in 32 nations to cut its carbon footprint.

By Alison Abbott

Hundreds of attendees watched circadian biologist Paolo Sassone-Corsi give his keynote talk at a scientific meeting last month. But barely one-fifth of them were sitting in the lecture hall in Munich, Germany. The others were viewing from virtual hubs across 18 time zones.

The five-hour 'pop-up' conference on 18 November was an experiment to test the feasibility of making scientific meetings virtual, in a bid to cut the large carbon footprints created by attendees' air travel.

Organizers of academic and other international meetings have begun experimenting with ways to offset or cut down on carbon emissions, but the November meeting of the European Biological Rhythms Society (EBRS) is one of the first to take a systematic approach to retaining a key benefit of conventional meetings: networking and face-to-face contact. Its organizers invited psychologists to evaluate whether technology and organizational techniques can aid interaction and networking, for example by enabling seamless discussion across different locations, and encouraging participants at all sites to hold social events.

"We are now busy analysing the outcome, but at first glance it seems to have been more successful than I had dared hope," says Martha Merrow, a circadian biologist at the Ludwig Maximilian University (LMU) in Munich, who organized the mostly virtual meeting. Participants, who joined from 32 countries, said there were advantages beyond cutting carbon – for instance, parents who might find it difficult to arrange travel could attend. The EBRS says it will continue experimenting with the approach.

Virtual movement

The experiment comes in a year of worldwide activism on climate change, and as scientists in many fields have started to think about the carbon footprints of their globetrotting activities. "Our work tends to be dominated by international meetings and flights," says Corinne Le Quéré, a climate scientist at the Tyndall Centre for Climate Change Research in Norwich, UK. "We need to have a plan to reduce emissions by carrying out our work differently."

In 2015, Le Quéré co-authored one of the first carbon-reduction strategies created for a research institute. It recommended that scientists monitor the carbon output of their professional activities, avoid travelling to meetings unnecessarily and prioritize events with only small carbon footprints.

Le Quéré says that the Tyndall Centre has since tested ways to reduce travel, such as using video-conferencing, and many meetings are trying similar online approaches.

Fluent discussions

The EBRS meeting is a more advanced experiment, says Le Quéré, because of the inclusion of psychologists.

For Merrow, who was inspired by the climate-strike movement, the pop-up conference was a way to test the waters. She chose a topic – the influence of the circadian rhythm on metabolism – for which there was lots of expertise near Munich, where all the talks were given.

Sasonne-Corsi, who is based at the University of California, Irvine, was in Europe anyway when he gave the plenary lecture. Six short talks were repeated before and after his speech to ensure that participants in all the time zones could listen to them, whether in the morning or late evening. Three of the speakers travelled to Munich by train or car, and Merrow bought carbon offsets to compensate for the drive.

Invited speakers were enthusiastic, she says. Sassone-Corsi says, "The scientific endeavour has become too big – we all travel to too many meetings, and I get very tired." He travels intercontinentally around ten times a year.

The meeting was broadcast to five virtual hubs through high-quality, two-way video systems at universities in Tel Aviv, Israel; Zurich, Switzerland; Boston, Massachusetts; Tokyo; and Porto Alegre in Brazil. Another 69 hubs were set up for small groups of researchers to watch one-way video broadcasts and send questions or comments through Twitter.

"It was possible to have fluent scientific discussions," says Merrow, and some satellite groups organized local social events. In total, at least 450 people attended the conference and nearly 60% joined in through the interactive hubs on Twitter. About 10% more people attended the virtual meeting than went to the EBRS's annual conference in August in Lyon, France.

Psychological needs

Merrow invited LMU psychologist Anne Frenzel to assess the success of the approach, and the two are analysing feedback collected at the virtual conference and the Lyon meeting.

Aside from cutting emissions, participants mentioned advantages of the virtual meeting, including not losing time and energy to travel, and students being able to attend for free. Scientists in Brazil and Israel mentioned that it released them from the bureaucracy involved in booking flights to overseas conferences.

"This is not only about carbon footprints – it also offers a huge opportunity to think innovatively about how scientific discussions take place," says Merrow.