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Editorial

Are hybrid conferences the new standard?

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This issue includes a perspective contribution by Lefresne et al. [1] on face-to-face scientific conferences versus virtual meetings and the implications for climate change. Generally, it is the policy of the Green Journal not to publish contributions with non-scientific content. In this specific case, the editors believe that the contribution by Lefresne and colleagues raises an important point that needs careful consideration and discussion in our scientific community. As scientists, we are at the forefront of research and strive to positively shape the future for humankind. Therefore, it is of key importance that the environmental impact of scientific activities is considered, and that our community develops and contributes to solutions to prevent further exacerbation of climate change with its substantial impact on health-related issues. This includes that pros and cons of face-to-face scientific meetings are carefully weighed.

The COVID-19 pandemic has taught us that virtual meetings are not only technically feasible and presumably less expensive but can also bring together a larger geographically dispersed community that cannot be reached with face-to-face meetings alone [2]. However, the pandemic has also shown us that online meetings can have some significant cons as well as pros for young scientists in particular [2]. Young scientists benefit more from in-person meetings, where they can get valuable feedback from peers that can help them refine their ideas and better shape future research. Face-to-face meetings are also a platform for building networks that can lead to new partnerships and projects and are particularly important for the future of early career scientists. There are also

significant financial implications for scholarly societies, as virtual meetings may not be as attractive as in-person meetings, resulting in lower attendance and revenue, but can cost similar amounts to organise and provide. It also remains unclear how our industry partners can be satisfied with online formats alone.

Probably everyone agrees that travelling will be associated with CO₂ emissions for the foreseeable future and that we urgently need to change our attitudes and behaviour. However, it is also true that there are many other causes of carbon emissions, including most other human activity. For example the Center for Climate and Energy Solutions list the main primary causes globally of greenhouse gas emissions as electricity and heat production (31%), agriculture (11%), transportation (15%), forestry (6%) and manufacturing (12%). They also state that energy production of all types and for all activities accounts for 72% of all emissions (<https://www.c2es>). A good strategy to decrease CO₂ emission needs to consider a canon of measures and a global approach. Health professionals and scientists must do their part and, also in the opinion of the editors of this journal, should be at the pioneering frontier not at the end of the caravan. Not to be neglected in this context are some positive aspects and behavioural changes that have emerged from the pandemic and the energy crisis, e.g. that in Europe the development of carbon-neutral means of travel and transportation such as electric vehicles has accelerated and people have become aware of their own carbon footprint. In addition, tele-conferencing, tele-counselling and mobile working have rapidly become a reality in research institutions and hospitals worldwide.

Taken together, we are dealing with a much more complex problem that cannot be solved simply by not traveling to conferences anymore, which may have huge associated implications on

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many levels, such as potentially lower quality of education and experience/science exchange, which in turn could lead to potentially lower quality of care and slower development of new treatments, as well as the financial implications.

So where do we go from here? Which option is best will depend on the goals of the meeting, the type of information being shared, the resources available, and last but not least, the audience. It is important that scholarly societies carefully consider the costs and benefits of each approach or offer hybrid solutions that support their mission and financial stability. Some of these aspects are considered in reference 2. Hybrid solutions offer possibilities to follow specific sessions for people who did not have an opportunity to travel, to faster switch between sessions and to re-watch specific talks. On the other hand, for large conferences it causes additional high costs that a society needs to be willing to cover. It is also important that scientific societies work together with professionals to de-carbonize and de-waste their conferences as rapidly as possible. Many scientific societies and conference support industries began this process many years ago, but there is still much to improve.

We commend the BC Cancer Planetary Health Unit and the authors for bringing this topic to the attention of a wider audience and sharing it with our scientific community, and hope that the members and leadership of scientific societies will make this a subject of continuous improvement.

The Editors

Conflict of Interest

The authors declare no conflict of interest.

References

- [1] Lefresne S, Brown M, Ellard E, Duncan G, Rose J, Darud M, et al. A Perspective on In Person Scientific Meetings. *Radiotherapy Oncol* 2023. in this issue.
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