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Title: ACNP efforts toward reducing climate change

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Climate change is an urgent global crisis; while numerous impacts of climate change are already becoming apparent, reductions in greenhouse gas emissions over the next few years will mitigate some of the most catastrophic consequences [1]. Scientific organizations have a significant role to play in addressing this crisis, and the scientific community can act as leaders in global efforts to address climate change.

One of the most effective ways in which the scientific community can limit its environmental impact is to reduce air travel [2, 3]. An average one-way flight from New York to Chicago is associated with approximately 0.21 metric tons of CO_2 emissions, and a flight from Los Angeles to Chicago approximately ~0.51 metric tons [4]. For comparison, the average human emits an estimated 5 metric tons of CO_2 per year, and the average American, 16.4 metric tons [5].

The American College on Neuropsychopharmacology (ACNP) is a non-profit professional society dedicated to advancing the scientific understanding of and facilitating communication about disorders of the brain and behavior [6], and *Neuropsychopharmacology* (NPP) is its official journal. The ACNP holds its annual meeting every December. The annual meeting attracts almost 2,000 attendees. In preparation for that meeting, a Program Planning Committee Meeting is held every July in Chicago, where about 50 attendees discuss which symposiums should be selected for the meeting. Attendees typically fly in the night before and fly home the night after the meeting. The costs of Committee members' airfare, lodging and meals, which are paid by ACNP, runs into the tens-of-thousands of dollars and have numerous negative environmental consequences.

Members of the 2019 ACNP Planning Committee Meeting submitted a letter to the ACNP Council, which is the organization's central leadership body, suggesting that in response to the threat posed by global warming, future Planning Committee Meetings should be held online rather than in person. The letter noted additional advantages of an online format, including reducing time members would need to spend in transit, reducing barriers to participating that might be caused by personal and family obligations, and reducing the cost of organizing the annual meeting. Some but not all members of the Planning Committee chose to sign the letter.

The letter also proactively addressed some of the potential disadvantages of virtual Planning Committee Meetings, such as a potential reduction in the scientific quality of the meeting and the lack of in-person interactions that motivate some members to volunteer to serve on the Program Committee. It was noted that the Program Committee also meets in person during the annual meeting in December, providing time for socializing and networking. The letter argued that a reduction in the quality of the symposia selected would not be a major concern because most symposia are accepted or rejected as a result of pre-meeting scoring that does not involve any interaction among committee members; the only symposia proposals that are discussed are the ones that received mixed reviews. It was also noted (in 2019, before the onset of the COVID-19 outbreak) that members were growing increasingly proficient at utilizing virtual meeting platforms and that those tools were themselves improving every year. Council decided that starting in 2021, the Program Committee would be moved to a virtual format (the 2020 meeting was already planned, and many costs had already been paid in advance). As a result of the global pandemic, this change ultimately became effective for the July 2020 Planning Committee Meeting (Fig. 1).

The decision to hold the Program Planning Committee meeting virtually rather than in-person serves as a small example for how individual scientists and organizations can play a role in addressing a global crisis. Similar efforts have been undertaken by Parthenon Management Group (PMG), which is

owned by the ACNP and organizes several other academic and professional conferences. PMG has adopted a green policy and has committed to 100% carbon neutral meetings through using locally-sourced materials and recycling and composting leftover food and meeting matter [7]. PMG also works directly with South Pole Climate Solutions, which enables organizations to reduce their impacts on climate change through carbon offsetting, including reforestation, improved forest conservation, and investing in renewable energy and community energy efficiency projects [8]. Likewise, Springer Nature, the publisher of NPP, has pledged to reach carbon neutrality by the end of 2020 by using sustainable paper products, limiting plastic book wrapping, and carbon offsetting through fiscal support of carbon balancing projects around the world [9]. These efforts will reduce the carbon footprint not only of the ACNP and associated organizations, but will save thousands of dollars, spare travel time, and has the potential to increase the equity and diversity of the field of neuropsychopharmacology in the long-term.

Although the decision to make the Program Committee meeting virtual was accomplished before the COVID-19 outbreak, the pandemic has demonstrated the feasibility of transitioning to online interactions. People have rapidly grown accustomed to meeting online, and processes involving reviewing and building consensus (e.g., National Institute of Health [NIH] study sections) have been developed and refined. Nonetheless, while the pandemic has shown how much the scientific community can accomplish

online, it has also emphasized how much people prefer in-person interactions. In addition to the Planning Committee Meeting, the 2020 annual meeting scheduled for this December has now been moved online. While much of the scientific community is looking forward to a time when travel restrictions are lifted and in-person meetings are again possible, the pandemic can help the scientific community identify which activities can be transitioned to online formats and which should remain in person. When travel is necessary for meetings, locations that reduce the total miles traveled can be chosen [10], and venues that are more sustainable can be selected. Attendees can also consider donations to offset their carbon emissions, following the examples of PMG and Springer Nature, although such approaches are only a partial solution [11]. Scientists must be aware that carbon offsetting is not a long-term solution [12]. The example of the changes made by ACNP will hopefully serve as an example to emulate and raise awareness within other organizations and members of the scientific community, but ultimately collective sacrifices must be made to preserve our planet for future generations.

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Author Contributions

AAP and CJJ conceived of and wrote this commentary together.

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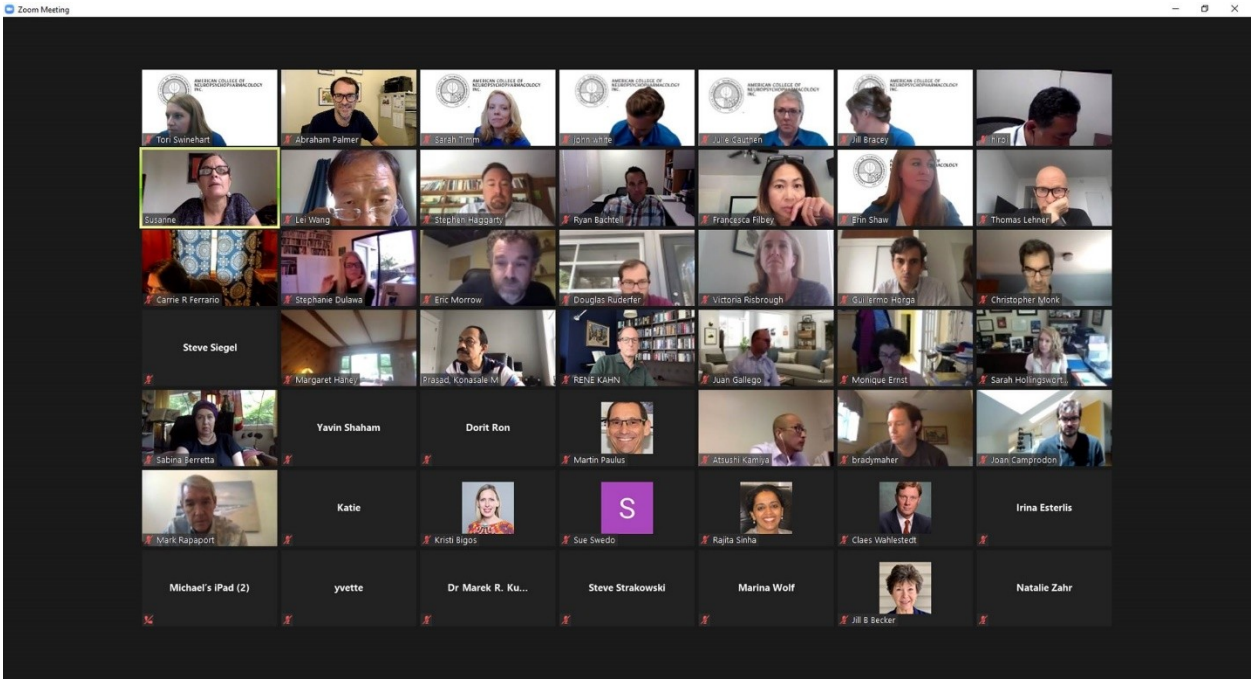

Figure 1. The virtual 2020 ACNP Program Planning Committee Meeting. Zoom call showing the new look of the Annual Program Committee Meeting and familiar to all scientists who worked during the novel coronavirus pandemic.

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