Airborne in the era of climate change

The Intergovernmental Panel on Climate Change (IPCC) recently released its special report on limiting global warming to 1.5°C (1). The IPCC’s 2050 target of carbon neutrality is strongly challenged by sectors with unavoidable emissions, such as aviation. Forecasts of the sector’s growth predict that by 2050 it could have consumed up to one quarter of the total global carbon budget for 1.5°C (2). The absence of substantial technical gains in aircraft emissions implies that reduction of aviation impact will be unfeasible without a decrease in demand (3). Air travel contributes substantially to the carbon footprint of academic communities (4), despite calls to travel less (5). In the current academic system, avoiding flying means accepting tradeoffs, such as greater challenges to collaboration and networking. However, the cost of inaction and business as usual is the growing global threat of climate change, and scientists, given the alarms they regularly raise, should model responsible behavior to the planet. To encourage low-impact mobility, scientific institutions should adopt an avoid-mitigate-compensate approach similar to that developed in ecosystem conservation (6).

To avoid unnecessary journeys, institutions, department heads, and principal investigators should encourage scientists to consider or provide alternatives, such as teleconferencing and virtual scientific conferences. To mitigate emissions resulting from travel, scientists who must travel should replace flights with cleaner modes of travel as much as possible. Participants should prioritize local meetings, and organizers should reduce distances traveled by choosing central locations. To compensate for travel, scientists should financially contribute to credible and traceable projects for reducing and removing carbon emissions. This should be the last resort, given the questionable effectiveness of carbon offsetting (7).

There is increasing discussion about the best way to evaluate scientists, teams, and research projects (8), and including a carbon sobriety criterion could be a good way to reduce scientists’ carbon footprint. Individual involvement is crucial, but supportive institutional environments [e.g., (9)] are also required to incentivize carbon-neutral behavior at the scale and speed required. Institutions invariably have policies for preventing and reducing harm, which address problems such as physical safety and data security. Surely the protection of planetary health, through the dramatic carbon cuts that are now urgently required, has a place in institutional policy, too.

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