

Calling Upon Universities and Professional Associations to Greatly Reduce Flying

Further Information and Frequently Asked Questions

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Environmental Impact

What is the global and U.S. environmental impact of flying?

The global impact of flying is immense. It is impossible to meet global greenhouse gas targets for the transportation sector through efficiency gains alone. It is essential to change transportation behavior as well.

In the most recent comprehensive source available as of this writing, the transportation working group for the Intergovernmental Panel on Climate Change (IPCC) estimated that the direct greenhouse gas (GHG) emissions from aviation accounted for 10.62% of global transportation emissions in 2010 (Sims et al., 2014). This included 6.52% of transportation emissions for international aviation and 4.10% of transportation emissions for domestic aviation.

The IPCC working group estimated that the transportation sector as a whole was responsible for 7.0 million metric tonnes of carbon dioxide equivalents (GtCO₂eq) in direct GHG emissions (including non-CO₂ gases) in 2010, which was 23% of total energy-related CO₂ emissions. Therefore, aviation may represent at least 2.5% of CO₂ emissions (Aschwanden, 2015; Lee, Lim, and Owen, 2013).

These global estimates understate the full climate change impact of flying. They do not consider the enhanced impact due to the release of aviation emissions at high altitudes, where they influence climate change through the process of “radiative forcing.” This radiative forcing may multiply the climate change impact of flying by a factor of 3 (Lee et al., 2009). The more conservative adjustment factor used in the CoolClimate Network calculator from the University of California Berkeley to account for radiative forcing is 1.9, meaning that the full climate change impact of flying is approximately double the direct impact of the greenhouse gas emissions (Jones and Kammen, 2011). After accounting for this issue, some estimates suggest aviation is responsible for 5% of global human climate change impacts (Van Renssen, 2012).

Compared to global estimates, flying is much more widespread in high-income countries such as the United States. Chris Jones at the CoolClimate Network estimates that flying is responsible for 3.4% of the average American household’s direct emissions, although this estimate necessarily makes assumptions about the average number of flights per year (McDonnell, 2015). The U.S. Environmental Protection Agency (2015) estimates that transportation is responsible for 28% of all greenhouse gas emissions, and aviation accounts for 8% of these transportation-related emissions (the largest contributor after cars and trucks). Taking account of radiative forcing, the full impact of the average U.S. household’s flying is much higher.

For an academic professional, what fraction of personal environmental impact is attributable to flying?

For many academic professionals, the personal environmental impact attributable to flying is higher than the global and U.S. averages reported in the preceding question.

The distribution of flights is highly unequal, with a small fraction of people responsible for most flights. Most people in the world, and even most people in the United States, fly seldom. The best data we could find on the typical annual number of flights for Americans comes from a 2012 Gallup poll (Gallup Inc., 2015). In the previous 12 months, 48% of respondents had taken zero trips by commercial airline, 27% had taken 1 or 2 trips, and 25% had taken 3 or more trips.

This means that if you took 3 or more trips in the past year, you belong to an exceptional group. Your transportation contribution to climate change is so much higher than average that the global and U.S. estimates discussed previously are nearly irrelevant for understanding your own impact. Instead, it may help to use an online calculator, such as the CoolClimate Network calculator, to consider an individualized case (<http://coolclimate.berkeley.edu/>).

For example, according to the CoolClimate Network calculator:

- A typical household in Chicago, IL, has 43.5 tons of CO₂ equivalent emissions per year, of which 1.38 tons (3.2%) are attributable to air travel. This assumes an average household income (below \$80,000 per year) and only 3,100 miles of air travel per year.
- By contrast, an academic professional's household with income of \$80,000-100,000 and 12,000 miles of air travel per year would have 55.8 tons of CO₂ equivalent emissions per year, of which 5.36 tons (9.6%) are attributable to air travel.

In other words, for an academic professional with moderate flying behavior, flying may be responsible for 12.3% (5.36 tons / 43.5 tons) of the climate change impact of a typical Chicago household.

Many university-based academics fly much more than 12,000 miles per year. We have faculty colleagues who diligently limit their environmental impact in many areas of their lives, but not their flying behavior. For an academic professional who eats comparatively little meat, commutes by public transportation, sets the home thermostat at a reasonable temperature, and drives a fuel-efficient car, unrestrained flying behavior easily may be responsible for a large fraction of his or her total climate change impact.

This fact has led some writers to reflect on the climate change impact of the academic community's own flying. Waring et al. (2014) estimated the greenhouse gas impact of travel for one major climate change initiative. Thompson (2011) discussed the implications of flying for professional climate scientists more generally. Nevins (2014) measured the flight-related ecological footprint of a 2011 meeting of geographers. Green (2008) asked whether international medical conferences are now outdated. See also Zoloth (2014), Philippe (2008), Reay (2004), and Ponette-González and Byrne (2011).

Universities

How can university-based faculty reduce their flying without reducing their productivity?

A 2015 editorial in the journal *Nature* suggested: "As the world warms and technology improves, researchers and institutions should look at their carbon footprints and question whether they really need to travel to academic conferences."

Consider the following options. Not every option will be right for every scholar, but, taken together, these options can reduce flying substantially without reducing productivity.

- Increase your research and writing time. Written output may have greater lasting impact than some oral presentations.
- Participate in more conferences and meetings remotely. Remote participation may achieve some communication goals while saving the travel time.
- Attend some annual association conferences once every two years. By selecting the years when annual conferences happen to be closer to your home, you may be able to travel overland more frequently. On the years you do attend, prepare more in advance, stay longer, attend more sessions, and make greater efforts to connect with your full network of professional colleagues and friends.
- Turn down invitations to conferences and meetings that are not worth your trouble, such as for excessively short presentations as part of multiple-person panels. They may not enhance your reputation as much as you think.
- In field research, avoid duplicate travel occasions by staying for a longer time on a single trip.
- Recommend a graduate student or junior colleague to give a presentation in your place. Build your long-term place in the field by advancing the careers of your proteges.
- Plan ahead to work harder on the train or bus while traveling to conferences. Many trains and buses now have WiFi, and, even when internet is unavailable, you may be able to concentrate better without it. Enjoy dedicated bonding time with colleagues from your own university when car-pooling or van-pooling to conferences.
- In the destination location for conferences, plan ahead to visit colleagues at local institutions to strengthen connections that otherwise might have required a separate trip.
- Take full advantage of all relevant conferences, meetings, and visiting speakers that come to your own university's location. Build your professional network in ways that fully use the travel time that others already have committed.

How can universities support and encourage less flying?

Universities can support the efforts of faculty members in several ways.

- Modify text in appointments and promotions manuals to enhance the focus on substantial written research contributions and high-impact presentations, without rewarding a large number of comparatively low-impact presentations.
- Provide more support for train, bus, car-pool, and van-pool travel, while making internal support for flying expenses more scarce and competitive.
- Include faculty flying as part of data collection and reporting in university-wide sustainability goal-setting and periodic reporting.
- Reduce support for short faculty and student educational trips to distant locations, while increasing support for longer-term educational experiences abroad. Short educational trips to locations that also are tourist destinations signal a high level of privilege. Such trips undermine university efforts to support environmental sustainability and educate students for true global citizenship.
- Speak up in university communications about the importance of flying less to achieve global environmental targets.

Is it sometimes important for academics to fly?

Yes. When we discuss the themes of this petition, our faculty colleagues mention important flights that they would not want to miss. On some travel occasions by air, our colleagues have given brilliant conference papers, collected novel data, formed life-long collaborations, influenced public policies, developed action plans to address humanitarian emergencies, and changed the world for the better. Rest assured that these are not the flights we propose to reduce.

In the same discussions, we also ask our faculty colleagues about the flights that were less fruitful. Our colleagues tell us about sometimes being pressured to accept conference invitations, flying long distances to give short presentations, regretting the inability to concentrate on productive research and writing, and resenting the time away from their families.

We sometimes ask colleagues what fraction of their flights could be reduced without impairing their productivity and career success. The answer often is surprisingly high, reaching half or more of all flights. One might ask why faculty members sometimes fly to conferences and meetings that are unrewarding. One common answer is that they feel pressure not to miss the same events that other people in the field are attending. Collective action and coordination will help us alleviate the air travel arms race, allowing us each to scale back comparatively less productive travel without sacrificing the flights that really are most important.

Is there any real-world evidence that professionals can reduce flying without harming their careers and quality of life?

Some professionals have put low-flying and no-flying principles into practice. Here are just a few selected examples:

- New Zealand attorney Tom Bennion manages a law practice without flying: “I believe that, because of the ‘fault line’ that flying represents in the climate issue, it would take only a few high-profile institutions (such as climate institutes at universities) and individuals (such as academics, politicians, or film or pop stars) to declare that their frequent-flying days are over, and we would have a whole new debate about urgency and what our governments need to do about reducing emissions” (Bennion, 2014).
- London-based travel agency entrepreneur Kate Andrews runs a start-up business without flying: “Few people are prepared to give up their freedom to travel by air, but the uncomfortable truth is that the only way to reduce aviation emissions significantly is to fly much less or even not at all” (Andrews, 2014).
- American meteorologist and Slate columnist Eric Holthaus went a year without flying to help raise awareness about climate change: “This week marks one year since I last flew on an airplane. To the likely dismay of Fox News, which called me a ‘sniveling beta male,’ my decision didn’t result in a dramatic tailspin of self-loathing or suicide, the ultimate carbon footprint reducer. Quite the contrary: It’s been an amazing year” (Holthaus, 2014). He has since pledged to continue not flying.

- Kevin Anderson from the Tyndall Center in the United Kingdom describes some lessons from his experience using rail to travel across Asia for a climate change conference in China: “I remain convinced that a carefully planned train journey not only delivers order of magnitude lower emissions, but it facilitates the process of research in a way that universities and daily life simply can’t match. Add to that the ‘slower’ ethos that such journeys engender and I think there may be early signs of making a meaningful transition to a low-carbon future – or at least a bridging ethos whilst we wait for the panacea of low-carbon technologies to become the norm” (Anderson, 2014). Anderson has not flown for more than a decade.
- Some of the drafters of this petition also have stopped flying for a period of time. I (Parke) have gone more than a year without flying while on the faculty at Tufts University, and others in our group of drafters have gone much longer without flying. For me, the decision not to fly was valuable not only because of personal GHG impact (which is small for just one person), but more importantly because it offered insight into what an active academic career might look like in a more sustainable world (Wilde, 2013).

Professional Associations

How can professional associations reduce the environmental impact of conferences?

Professional associations can support efforts to reduce flying in several ways. Some of these options are comparatively easy and consistent with existing business models for professional associations. Other options are more difficult and require new ways of thinking about how professional associations are funded.

- Allow easier remote access to some or all conference sessions. Some changes to session design are needed, especially for questions and answer segments, but methods have already been developed and field-tested. For example, the “Signs of Change” conference in New Zealand in 2010 provided a first-of-a-kind model for simultaneous conferencing in multiple locations (Krumdieck, 2014; Krumdieck and Orchard, 2011). Further initiatives to develop this approach are possible (Signs of Change, 2012). Virtual conference technology is now widely available and inexpensive (Tsur, “7 Reasons Virtual Conferences Will Transform Industries Worldwide”, 2013).
- Strengthen the infrastructure for written output from conferences, such as through online archives for submitted conference papers and slides.
- Choose conference locations that are geographically central or that are near multiple major population centers, so that a higher fraction of participants can travel overland.
- Choose conference locations at major airline hubs, so that a higher fraction of participants can fly direct.
- For major conferences, arrange charter buses from selected cities within a one-day driving distance from the location. If bus travel goes direct to the conference site, it saves the cost and time of the local transport leg of the trip, thereby making bus travel more competitive with flying.

- Strengthen the association’s regional conferences, with national and international conferences scheduled perhaps once every two years.
- Consider taking a break from the annual conference in a particular future year. The bioethicist Laurie Zoloth, president of the American Academy of Religion, has proposed that her own professional association pause its annual conference in 2021, so that members can use the time to work for justice and sustainability in their own communities (Oppenheimer, 2014).
- Include flying to conferences, and not merely in-conference practices such as paper recycling, as part of the professional association’s environmental sustainability goal-setting and progress reporting.
- Speak up for the importance of flying reduction in communications with members.
- Highlight environmental sustainability accomplishments in public relations material for the professional association. Claim well-deserved credit for the high principles and good works of your association.

Quite likely, associations that address environmental issues (natural resources, environmental science, environmental policy, land use, weather and climate, food and resource economics) may be the first adopters. Associations that address broad public interest issues (public health, sociology, nutrition, medicine, geography, religious studies, international development, social justice) may follow soon. We hope there will be reputational and actual advantages for the professional associations that take early action.

Common Misconceptions

Is it okay to fly if I purchase carbon offsets?

Many carbon offset programs are mere “greenwashing,” public relations gestures that may do more harm than good (Beder, 2014; Anderson, 2012). Sharon Beder explains:

While we don’t know exactly where airline offset money goes, carbon offset money is mainly spent on investments in renewable energy, efficient energy projects, methane capture, and biosequestration projects that absorb CO₂, such as tree plantations. In 2012, 34% of the global voluntary offset market was spent on renewable energy projects and [32% on biosequestration](#). Many of these offsets are of dubious value in terms of genuine greenhouse gas reductions (Beder, 2014).

The notion that buying an offset—and funding a “green” energy technology, for example—will reduce emissions to at least the level if one did not take a flight in the first place assumes an ability to predict the future. In other words, it assumes that one can forecast what the long-term emissions impact will be of the activity enabled by the offset (Anderson, 2012). The main impact of offsets is to make frequent flyers in rich countries feel more complacent about flying, thus limiting our collective progress toward making far-reaching cuts.

Is my decision to fly irrelevant, because the plane would have flown anyway?

Nonsense! Some have argued that the marginal carbon footprint from flying is zero, because the plane would have flown anyway, but this is a fallacy.

For example, economist Matthew Kahn made this argument in a recent blog post (Kahn, 2014a and 2014b). Kahn was addressing a proposal by the bioethicist Laurie Zoloth, the president of the American Academy of Religion, who suggested that the academy cancel its conference in a single future year (Oppenheimer, 2014). Kahn wrote: “For everyone who would have attended her field’s annual conference roughly 90% will fly in and flying is carbon intensive but the airplane still would have flown the same route even if the attendees were not on the flight.” Noting that potential conference attendees may also have carbon emissions if they stay home, he continued: “So, I actually would conjecture that the aggregate carbon footprint of holding the conference is lower than if the same people stay home. Again, I’m valuing the carbon footprint from flying at zero because the same planes would have flown even without the conference. I realize that this point can be debated.”

This point is indeed too good to be true. The airlines are not in the business of flying empty planes, so somebody must have provided the economic demand that supported the scheduling of each flight.

There are two equally sensible ways to look at this question, both of which lead to the conclusion that the best estimate of personal carbon emissions from flying is the average emission per passenger on the flight (which is a large positive number).

1. We could simply attribute the flight’s carbon emissions equally to each passenger on the flight. This leads directly to the conclusion that each passenger’s carbon impact equals the average emission per passenger.
2. We could instead consider the marginal impact of each individual passenger, as Kahn (2014b) attempted to do. For many passengers, this marginal impact could be quite low (related merely to the additional fuel required to fly one more passenger). For some critical passenger, who tipped the balance of the airline’s business calculus in favor of scheduling the flight in the first place, this marginal impact would be very high (most of the emissions from the flight). None of us knows which passenger tipped the balance. So, to compute our expected climate change impact, we have no better option than to draw on statistical probability and use the expected value of our marginal impact. Taking the average over all the passengers, including the one passenger with the big impact and the many passengers with the small impact, the best estimate of expected personal carbon emissions is once again the average emissions per passenger on the flight.

Is reduced flying an individual-focused agenda that undermines more important policy change?

We recognize and appreciate the many thoughtful people who have raised this question. For example, in the book *Beyond Flying*, Chris Brazier quotes an extended explanation of this concern by Adam Ma'anit: "My worry is about the focus on individual consumption, on individuals taking flights. I think the emphasis needs to go back toward political, economic and environmental policies" (Brazier, 2014).

Similarly, economist Juliet Schor gave an insightful David Gordon Memorial Lecture on capitalism and climate change at the Allied Social Sciences Association in January 2015 (see Knight and Schor, 2014). During questions from the audience, I asked whether scholarly communities working to address climate change might in the future change how frequently they fly to such conferences. Schor responded that, rather than take the "insidious perspective" that only personal choices matter, we should address the role of collective response in which flying is just a part.

As a third example, I enjoyed a lively conversation with an inspiring group of Tufts University student organizers, while on the bus they arranged to the 2014 People's Climate Rally in New York City, which was attended by more than 300,000 people. The student organizers focused foremost on university divestment from fossil fuels industries, and they expressed concern that addressing flying would distract attention from more important social change initiatives.

Taking these observations to heart, we have designed this petition to support and contribute to -- not compete with -- other ambitious social and political initiatives to address climate change. Yet, we also need to be honest about the fact that any just path to addressing climate change will affect the lifestyles not just of the richest 1%, and not just of wealthy oil industry executives, but of all of us who use far more than our share of the world's resources. Consider any plausible success story for economic and social policy to address climate change. For example, suppose the federal government establishes a carbon tax, or sets caps on each industry's carbon emissions, or provides subsidies for conservation measures, or reforms the financing of petroleum industries. If any of these measures really succeeds, it will reduce average flying per capita along the way. The rare privilege of flying multiple times each year is inconsistent with all meaningful strategies to address climate change.

This question is so critical that we included our conclusion in the background section of the petition: "This petition is about much more than personal environmental choices. It is about coordinated large-scale institutional changes for global impact. For university communities and professional associations, reduced flying offers direct and indirect benefits for the environment. The direct benefits come from shrinking greenhouse gas emissions. The indirect benefits come from modeling in one social sector the type of change that is essential for all sectors, avoiding hypocrisy, and thus enhancing the moral voice and practical effectiveness of environmental research and policy advocacy by academic professionals."

This Petition

What is this petition project?

This petition asks universities and academic professional associations to greatly reduce flying. The project website at flyingless.org includes the petition text, a brief background, and a link to a change.org petition.

Who supports this petition?

See the terrific list of more than 50 initial [academic signatories](#), from diverse professions and all corners of the globe.

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