

Mitigating UCSF's carbon footprint from airline travel through
a university-led carbon offset programColin Baylen MS3
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Introduction and Background

Climate change poses substantial threats to earth's biological systems and will impact human health through increased morbidity and mortality from infectious disease, increased heat-related illness, compromised food security and water supplies, resource conflicts, climate-induced migration, and many other pathways. Vulnerable populations in the U.S. and people living in low-resource countries will be affected earliest and greatest. Global emissions continue to rise annually, and the United States is the second greatest emitter of CO₂ worldwide —the U.S. healthcare sector alone accounts for approximately 10% of these emissions. One of the greatest sources of this release is air travel.

Air travel by faculty and employees at UCSF is understood to be a major source of carbon emissions for the university. According to UCSF's annual sustainability reports, air travel represented approximately 8% of the university's carbon footprint in 2008; by 2018, had reached nearly 15%. These emissions have steadily increased nearly every year since UCSF started tracking its emissions.

	1990 MtCO ₂	1990 %	2008 MtCO ₂	2008 %	2014 MtCO ₂	2014 %	2018 MtCO ₂	2018 %
UCSF Business Air Travel	7,549	6.9%	12,582	8.0%	14,637	10.1%	18,748	14.5%

Project Goals and Development

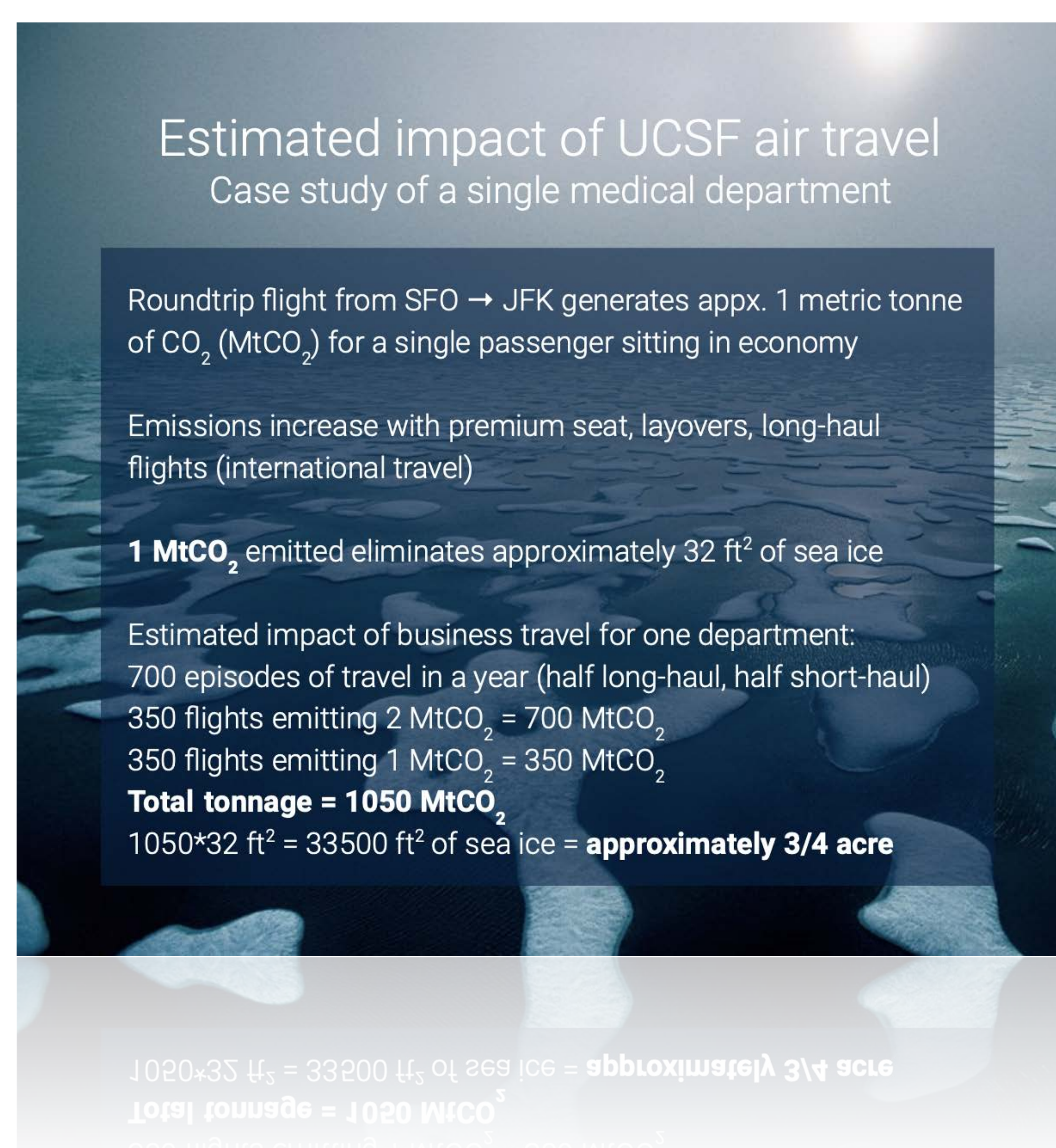
The goal of TERA has been to establish a university-wide emissions reduction program aimed at mitigating the carbon footprint from UCSF's substantial air travel related emissions. Development proceeded in five key steps:

1. Early discussions in Spring 2019 with administrators and research coordinators informed our understanding of how medical departments finance and track faculty travel. This allowed us to 1) estimate the quantity of department air travel and 2) understand how travel is typically monitored, financed and reimbursed.
2. We met with experts in the renewable energy sector and discussed possible ways a university could offset its travel-associated carbon emissions, such as consumer-facing carbon offsets, Western Climate Initiative auctions, and Renewable Energy Credits. This discussion examined existing models and practices at other universities and large organizations.
3. Following our decision to use a consumer-facing carbon offset vendor, we interviewed several vendors, ultimately partnering with CoolEffect, a Bay-Area non-profit.
4. A system for purchasing offsets was established — CoolEffect was added to UCSF's Supply Chain platform (Bear Buy) enabling departments to directly purchase offsets through BearBuy.
5. We then began formally presenting our proposal to department leadership at UCSF.

Methods (Project Structure)

TERA asked UCSF departments to commit to the following:

- A two fiscal quarter pilot with the possibility of extension after the second quarter
- Designate an administrative contact to help facilitate tracking/ purchasing with UCSF project coordinator at CoolEffect
- Permit sharing of quarterly travel expense reporting with CoolEffect Project coordinator and UCSF CNI fellows
- Approve funds to offset that quarter's travel at a cost of \$8.50 per domestic flight (appx 1 mtCO₂ emitted) and \$17 per international flight (appx 2 mtCO₂ emitted) —total amount based on invoice generated by CoolEffect.



Results and Outcomes

- Designed and implemented a UCSF-wide platform that allows travel-related carbon emissions to be offset by any department or research group through traditional supply-chain purchasing
- Prioritized carbon-offsets that utilize 'co-health benefits' in travel offsets (ie: clean cookstoves, bio-digester gas production)
- Prior to COVID-19 halting global travel we were in ongoing discussions with three medical departments to offset faculty travel
- Early discussions with the School of Medicine to offset residency interview travel emissions have begun
- Initiated a UCSF-wide discussion to reexamine the travel priorities in faculty and career development
- Developed expertise in carbon-offset options and market which has aided discussions within the office of sustainability in planning for UC Carbon Neutrality 2025

Conclusions

As a global leader in healthcare with the stated mission of 'advancing health worldwide', we believe UCSF has a responsibility to actively mitigate its carbon footprint and the impacts of climate change on human health. A university-wide carbon offset program offers an opportunity for UCSF to carry out this stated mission, demonstrate its leadership as a healthcare institution, and advance health worldwide.

Over the past year, UCSF faculty and leadership have been receptive to our proposal of an initial pilot. We entered 2020 in the process of finalizing a commitment from a department emitting approximately 750 metric tonnes of CO₂ per year from airline travel, as well as several other departments responsible for substantial academic air travel. With the onset of the COVID-19 pandemic, global restrictions on travel and shifting priorities for UCSF, our efforts to onboard departments with TERA are currently on hiatus.

For now, we are looking to the future, aiming to find ways to streamline our project for participating departments when the time is appropriate, and working on new ways to mitigate the carbon footprint of business and academic air travel at our university.

Future Goals

- Our incremental—department by department—approach has promise, however feedback from various stakeholders suggests that the most sustainable and prudent way to scale this initiative would be through a commitment from UCSF executive leadership which we intend to seek.
- TERA continues to be an iterative process that will continue to occupy our time in the coming years. While we have many of the mechanics in place, we continue work on its implementation.
- TERA has spurred a reevaluation of *why* we travel among staff and faculty, and we are in the planning stages for a faculty advisory group to formalize this conversation.

Acknowledgements

Project was developed with the guidance of UCSF and UCOP faculty advisors, and in coordination with the Office of Sustainability.

Special thanks to:

Katherine Gundling, Gail Lee, Dee Lawrence, Jodi Manning, Bruce Wintroub, Tom Newman, Homer Buchet, CoolEffect