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Tilden Chao '23 has spent the past year working to unravel a climate change mystery by cataloging the planet-warming refrigerants used in Yale dining halls, power plants, laboratory equipment—even dorm room refrigerators.

Refrigerant gases such as hydrofluorocarbons (HFCs) and hydrochlorofluorocarbons (HCFCs) are an under-reported contributor to global warming. In fact, these invisible and odorless gases are “climate super-pollutants,” with thousands of times the global warming potential of carbon dioxide. They leak from refrigerators and other equipment over the course of their lifetimes and can spill into the atmosphere all at once if not disposed of properly when equipment is retired.

Tilden is a junior at Yale College studying economics and working toward a certificate in the Energy Studies Multidisciplinary Academic Program. Like most people, he was unaware of the outsized role that refrigerants play in global warming until, as a 16-year-old high school student, he came across [Project Drawdown](#)'s list of 100 climate change solutions. He was surprised to see refrigerant management in the number-one slot. “I started researching refrigerant emissions and realized that even at the time, in 2018, there were technologically viable solutions to the problem.” By 2100, improving the management of refrigerant gases alone could prevent 101 gigatons of carbon dioxide-equivalent emissions, more than two years' worth of global emissions.

At Yale, Tilden founded the [Yale Refrigerants Initiative](#) with a \$25,000-grant from the Office of Facilities' Student Green Innovation Fund, which provides awards to student projects that can measurably reduce Yale's greenhouse gas emissions. Initially, the project focused on refrigerant emissions from mini fridges in student dorm rooms. But Tilden quickly realized that the real culprit was larger equipment used by Yale Hospitality and the thousands of refrigerators and freezers used by Yale's research community.

Extract taken from: https://sustainability.yale.edu/news/yale-undergrad-confronts-hidden-climate-threat-refrigerant-leaks?utm_source=YaleToday&utm_medium=Email&utm_campaign=YT_Yale%20Today%20Alum%20no%20Parents_4-21-2022