Total organic fluorine measurements in homes: insight on PFAS partitioning
Daniel Esteban Amparo (MS, 2022) – Advisor: Barbara Turpin

Abstract: Household dust, window films, air, AC condensation, and HVAC particles will be sampled and analyzed via combustion ion chromatography to measure total organic fluorine.

Fun fact: I have an addiction to playing volleyball.
Future Interests: study PFAS chemistry with the Office of Research and Development at EPA.

The importance of organic hydroperoxides in ambient aerosol
Rebecca Rice (PhD, 2025) – Advisor: Avram Gold

Abstract: Climate change boosts isoprene emissions. Isoprene-derived SOA, i.e., hydroperoxides, contribute to atmospheric PM2.5 under low-NOx conditions. By investigating synthetic routes for hydroperoxides we aim to determine composition, mechanisms of formation and distribution.

About Rebecca: Rebecca Rice has a B.S. in Chemistry from the University of New Orleans and a M.Sc. in Global Health from Duke. One fun fact: I took one semester of glassblowing in college. My future interests include working with scientists and policymakers to make informed science based decisions that benefit global health.

Role of C5H10O3 Isobars in Formation and Analysis of Isoprene Derived SOA
Molly Frauenheim (PhD, 2025) – Advisor: Avram Gold and Jason Surratt

Abstract: GC/ESI-MS analysis of isoprene derived secondary organic aerosol yields three C5H10O3 isobars (“C5 alkene triols”), which contribute substantially to isoprene marker mass, yet structures and origins were previously unconfirmed. Synthetic routes have been developed for three plausible C5H10O3 isobars, which can be used to resolve structures and investigate potential artifact formation during conventional thermal GC/ESI-MS analysis.

About Molly: I am a first year PhD student studying a combination of synthetic and analytical atmospheric chemistry. In the future, I hope to work in the public sector generally on the intersection of environmental chemistry and public health. One fun fact about me is that I am a twin!