THE GOAL

- To document the effect that alpha-humulene and beta-farnesene emissions have on cloud condensation nuclei (CCN).

BACKGROUND

- Particulate matter (PM) are solids or liquids suspended in the air.
- Our focus is on PM less than 1 micron in diameter.
- Health concerns and lack of regulation

EXPERIMENTAL METHOD

The Smog Chamber
- 10 Cubic meter Teflon bag
- Cloud condensation Nuclei Counter (CCNC)
- Scanning Mobility Particle Sizer (SMPS)
- Condensation Particle Counter (CPC)
- NOx analyzer
- Particle Generator
- UV lights to simulate sunlight
- Temperature controlled

CONSTRUCTING THE BAG

- Made out of four 5 x 16ft sheets of Teflon
- Sealed together using heat press
- Main worry is contamination from walls and other surfaces

FUTURE WORK

- Install ozone generator
- Install new reactor bag
- Construct new bulkhead
- Ensure functionality of gas chromatography

ACKNOWLEDGEMENTS

- Dr. Frank Bowman
- Nicole Larson
- Humphrey Chukwuto

This material is based upon work supported by the National Science Foundation Research Experience for Undergraduates under Grant No. CHE 1460825 and CHE1156584. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

REFERENCES

- http://slideplayer.com/slide/6537819