



ATOC COLLOQUIUM

Welcome!

Please join us for the **Special ATOC Colloquium in Honor of Prof. Brian Toon** on **Friday, Oct. 24** from **11:00 AM–12:00 PM**, which will be held in **SEEC S228** and **simulcast over Zoom**. This week's colloquium features Dr. Pengfei Yu from Jinan University, China, and Dr. Erika Barth from the Southwest Research Institute.

Pengfei Yu: A Journey to become an Aerosol Modeler

This talk traces my journey from graduate student to professor in aerosol science, reflecting on the profound influence of Brian Toon's mentorship. I will discuss key scientific lessons learned during my PhD research, where we developed the CARMA aerosol model and explored the Asian Tropopause Aerosol Layer. Our continued collaborations have expanded into pyroCb smoke studies with implications for nuclear winter scenarios, dust modeling, Hunga Tonga-Hunga Ha'apai volcanic aerosol transport, and stratospheric water vapor modeling. Through these research examples, I will illustrate how Brian's approach—rigorous model development, physical insight, and asking big questions—has shaped my career. Finally, I will reflect on how Brian's mentorship philosophy guides my own work as a professor in China, where I am now training the next generation of atmospheric scientists and building international collaborations in aerosol research.



Erika Barth: Investigating Titan's South Polar Cloud through Collaboration between Modeling, Labwork, and Observations

Saturn's largest moon, Titan, hosts an atmosphere with many similarities to our own. One such feature is the observation of clouds seen both in the troposphere and stratosphere throughout Titan's year. During southern autumn, the Cassini spacecraft began observing a large cloud in the south pole stratosphere, ~300 km altitude. Initially HCN ice was detected, followed by the signature of benzene ice. I have been working with a group at NASA Ames to measure cold-temperature properties of hydrocarbons in order to microphysically model the benzene observed in Titan's south polar cloud. I will discuss measurements we've made of benzene vapor pressure and critical saturation for nucleation and how these affect properties we can observe like cloud top altitude and particle abundance and size. These cloud properties are microphysically modeled using the Community Aerosol and Radiation Model for Atmospheres adapted to Titan (PlanetCARMA).



Zoom: <https://cuboulder.zoom.us/j/4713174822?omn=99341251732> **Passcode:** ATOC

About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences (ATOC) Colloquium is typically held **every other Friday** from **11:00 AM–Noon**. Colloquia alternate between the following formats: (A) Full-length talk by a faculty member or invited speaker, (B) Three conference-length talks by graduate students. If you would like to nominate a speaker (including self), please email the ATOC Colloquium Committee Chair, Prof. Jianghanyang (Ben) Li (Jianghanyang.li@colorado.edu). Please visit www.colorado.edu/atoc/colloquium for further details.