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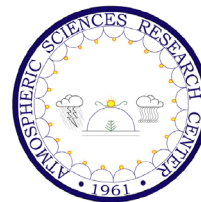
ATMOSPHERIC SCIENCES RESEARCH CENTER

Falconer Lectures

Summer 2024



Whiteface Mountain Field Station
110 Marble Mtn. Lane
Wilmington, NY 12997



Tuesdays Biweekly
July 9- August 20
7:00 pm



Whiteface Mountain
Field Station
Wilmington, NY

Free to the public

JULY 9

PFAS at Whiteface: A Peek at Forever Chemicals in the Adirondack Mountains

Adam Deitsch, PhD student at the University at Albany's Atmospheric Sciences Research Center with a background in Environmental Science

Over the past three years, Adam's graduate work has been funded by the NOAA Cooperative Science Center in Atmospheric Sciences and Meteorology (NCAS-M), researching the prevalence and role of micro/nanoplastic particulates and per- and polyfluoroalkyl substances (PFAS) as they are transported across great distances. Whiteface Mountain has long served as a platform for background atmospheric sampling, and we are working to expand these measurements to include a baseline for persistent pollutants. A recent pilot study has found PFAS in both cloud water and precipitation collected at the summit and base of Whiteface Mountain, respectively. These results raise questions and concerns about the ubiquity and lifetime of these substances, and the environmental and human impact as they make their way into the soil and waterways of the greater Adirondack region.



JULY 23

Introduction to the National Weather Service and Outlook for the Fall/Winter Season 2024

Robert Haynes, Meteorologist, National Weather Service forecast office Burlington, Vermont

Meteorologist Robert Haynes hails from the Atlanta, Georgia area. His love for showers and thunderstorms drove him to study how the atmosphere works. Robert has a Master's in Earth and Atmospheric Science and did a thesis on forecasting snowfall events in the southeastern United States after becoming stuck for almost 10 hours in track during the infamous "Snowmageddon" in Atlanta in January 2014. After briefly working for Florida Power and Light following the devastation that Hurricane Irma brought to Florida, Robert made the move to the National Weather Service in Burlington, Vermont in Spring 2018. Join us for Robert's discussion of the importance of the National Weather Service and his predictions for the upcoming cold weather season.

AUGUST 6

The Browning of Adirondack Lakes: Chemical Responses to Decreasing Acidification and a Changing Climate

Phil Snyder, Water Quality Research Manager, Ausable Freshwater Center

As lakes in the Adirondacks recover from the effects of chronic acidification, a perceptible change has been noticed in recent years. The water color of many lakes is becoming darker; a phenomenon that is known as "browning." Browning is the result of increases in Dissolved Organic material (DOM) entering waterways due to a decrease in acidification in combination with a warming climate and increases in precipitation. While the mechanism that causes lake browning is generally understood, how these changing conditions will affect water chemistry and ecological processes in the long term is still being determined.

AUGUST 20

The Role Clouds Play in Affecting the Atmospheric Composition

Mary Barth, Senior Scientific Section Head, Atmospheric Chemistry Observations & Modeling Laboratory, National Center for Atmospheric Research, Boulder, Colorado

The Earth's atmosphere is composed of gases and liquid and solid particles called aerosols that affect air quality, atmospheric radiation, and cloud properties, impacting climate and weather. Clouds affect the concentrations of trace gases and aerosols within the atmosphere in many ways. Foremost, the vertical transport of air associated with clouds is the primary means by which trace gases and aerosols move from air near the surface to higher altitudes where these gases and aerosols have a longer lifetime compared to near the surface. On the other hand, clouds can remove soluble trace gases and aerosols from the atmosphere via precipitation. The chemistry of the atmosphere, fueled by solar radiation, is altered by the presence of clouds mainly through the presence of liquid drops that promote aqueous-phase chemical transformations to highly oxidized species that add to the aerosol mass when the cloud drops evaporate or increase the acidity of rain that falls to the Earth's surface.

This lecture will review our current understanding of how clouds affect trace gas and aerosol concentrations, with an emphasis on the gas and aqueous-phase chemical transformations occurring in clouds such as those observed at the summit of Whiteface Mountain.

