



# Ray Falconer Natural History

## Lecture Series for Spring 2020

Tuesdays at 7PM

March 31 - May 5, 2020

Atmospheric Sciences Research Center

251 Fuller Road

Albany, NY 12203

**FREE ADMISSION**



**March 31\*: Paul Caiano, Meteorologist, WNYT, NewsChannel 13 Albany, NY. B.S. '93 UAlbany Atmospheric Science and Meteorology. "Forecasting an Array of Winter Precipitation Types."**

Precipitation comes in many different forms, especially during winter. There can be a large impact on the general public that is heavily dependent on whether a region gets snow, ice, or rain from a particular storm or a combination of many types. This talk will focus on how meteorologists determine which precipitation type will occur, and how small differences could have big implications on how communities respond to a storm. It will also touch on different types of snow, what changes the snowfall intensity within a storm, and how we tell if it will be a light and fluffy snow or a wet, slushy snow.

\*The 1<sup>st</sup> Lecture is at the SUNY Poly NanoFab South Auditorium, entrance immediately below the glass-enclosed pedestrian bridge connecting 2 buildings after turning right from Tricentennial Dr. into the CESTM parking area. All remaining Lectures are at the Sullivan Auditorium of the CESTM building, about 100 yards further northeast.

**April 7: Mark W. Wysocki, Senior Lecturer in Meteorology, Cornell University, New York State Climatologist. "Floods, Droughts, and Temperature Swings: The Impacts of Extreme Weather Events on Communities Across New York State."**

New York State is surrounded by many unique geographical features that produce a variety of weather and climate patterns across the state. This talk will explore the complex interactions between the various surface features and atmospheric wind patterns, and how they challenge us to understand our past, present, and future weather.

**April 14: Daniel P. Beverly, University of Wyoming Botany Department. "Blame it on the Moon: Plant and Ecosystem Responses to the August 2017 Solar Eclipse."**

The 2017 total solar eclipse provided a unique opportunity to elucidate astrophysical and biophysical processes that are rarely observed in North America. Wyoming, located along the central path, provided diverse natural ecosystems for observing midday darkness and the consequences to energy balance and gas exchange at both the leaf and ecosystem scales. The rapidly diminishing light and reduced temperature produced substantial reductions in daily carbon uptake (photosynthesis) from the individual plant to the larger ecosystem scales, while illuminating unforeseen regulatory mechanisms of gas exchange.

**April 21: Jon Abbott, University of Toronto. "The Chemistry of the Indoor Environment."**

We increasingly spend most of our lives and receive most of our chemical exposure indoors. And yet, the nature of indoor air chemistry is not as well studied as that in the outdoor environment. This talk will address the chemistry that is specific to indoor environments, addressing how it differs from the outdoors. For example, the indoor environment is characterized by having a very high surface-area-to-volume ratio that leads to species partitioning strongly to indoor surfaces. As well, the indoor environment is very dark, which inhibits the formation of many oxidizing substances. Specific processes discussed include: the oxidation of skin and cooking oils, the impacts of chlorine bleach washing on air quality, and third-hand cigarette smoke.

**April 28: Paul Winkeller, Senior Advisor, Urban Cycling Solutions. "Electric Bikes, Bikeshare and More."**

There is a rapidly changing universe of green and sustainable micro-mobility in cities and towns of all sizes in New York State and beyond. This talk will outline some of the most recent developments and facilitate a discussion about the future of human scale transportation in urban and suburban areas.

**May 5: Satoshi Hirabayashi, Ph. D., The Davey Institute, The Davey Tree Expert Company. "Human Comfort at the Tokyo 2020 Olympics: The Impact of Street Trees on Outdoor Temperature."**

Summer in Tokyo is oppressively hot and humid. In 2018, 224 people died, and about 8000 people were hospitalized due to heat-related illnesses. The Tokyo 2020 Summer Olympic Games are likely to be the hottest games ever, endangering athletes, spectators, workers, and volunteers. Trees, which are well known to suppress near surface temperature through shading and evaporative cooling, will serve a critical role in mitigating Tokyo's urban heat island during the Olympics. This talk will provide an overview of a new, physics-based model for estimating the cooling effect of trees in urban environments, as well as a related smartphone app for displaying simulated human thermal comfort levels. Both model and app will be demonstrated for the case of the Tokyo 2020 Olympics.

Tax-deductible donations to sustain the Natural History Lectures may be made out to the "University at Albany Foundation" and mailed to the University at Albany Foundation UAB-201, 1400 Washington Avenue, Albany, NY 12222. Address donations "Attention: Ray Falconer Fund"



March 31 location: NanoFab South Auditorium



April 7- May 5 location: Sullivan Auditorium

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