



# UEE Seminar Series

*Hosted by School of Urban & Environmental Engineering*

## Large-scale wildfire in/around the Arctic and its impact on air pollution

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Recently, frequent wildfires have occurred in many places in the world and have been of large concern under the ongoing global warming. To take better measures for wildfire and its possible impacts, better understanding of causes of wildfire and

its related air pollution are essential that would lead to accurate future wildfire prediction. In our recent paper (Yasunari et al., 2018, Sci. Rep.), we examined three

large-scale wildfire over East Eurasia in May 2003, April 2008, and July 2014, respectively. All these wildfire resulted in increased air pollution in Hokkaido, Japan

due to the trans-boundary transport. The common climate characteristics for all three cases showed that significantly dryer surface soil conditions at the beginning of the wildfire year and unusually smaller amount of snow and surface warming a couple months before the wildfire occurrences were seen, which could eventually

make the long-lasting dryer condition and that was preferable condition for large-scale wildfire on the fire month. This tells us that climate condition before the wildfire month would be very important for its better prediction. In June 2019, we installed our PM2.5 sensor system at the roof of the International Arctic Research

Center (IARC) in University of Alaska Fairbanks (UAF). The sensor could capture highly increased PM2.5 during the significantly large-scale wildfire in this June and July in Alaska. We further examined the climatic conditions relevant to higher PM2.5

in the Arctic region for more than one decade to assess the cause of such higher PM2.5 conditions in the Arctic region. Our analyzed climatic patterns in the past and the pattern in this summer in the northern hemisphere indicated interesting common characteristics. The details will be shown on the day of the seminar.