



# Global Health Lecture Series

## The Impacts of Dust Storm Particles on Human Lung Cells an Analysis at the Single Cell Level

featuring

**Karin Ardon-Dryer, PhD**

**Department of Geosciences, Atmospheric Science Group  
Texas Tech University**

**Wednesday, May 2  
Noon, ACB 110**

Aerosols particles (natural and anthropogenic) are a key component of our atmosphere. Their presence defines air quality levels, and they can affect our health. Small particles penetrate into our lungs and this exposure can cause our lung cells to stress, and in some cases leads to the death of the cells and to inflammation. During dust storm events there is an increase in particle concentration, many of them are breathable particles that can penetrate deep into our lungs. Exposure to dust particles can lead to respiratory problems, particularly for people with asthma. Therefore, during and after a dust storm event the number of people who are hospitalized with inflammation and respiratory problems increases. However, the exact mechanism that causes these health problems is still unclear. In this project, Dr. Ardon-Dryer and her colleagues are investigating the impact that dust storm particles from different sources and of different concentrations (doses) have on human lung cells, performing a new and unique analysis at the single cell level. Their findings will help to better understand the health-related consequences of exposure to dust storm events and serve as a baseline for when evaluating other aerosol.

Karin Ardon-Dryer, PhD is an Assistant Professor in the Department of Geosciences in the Atmospheric Science Group at Texas Tech University. Dr. Ardon-Dryer studies aerosol-cloud interactions and the effect that aerosols have on climate, the environment, and our health. In particular, her research combines field and laboratory work to investigate the interaction between human and climate, exploring human effect on climate in the short and long terms. Dr. Ardon-Dryer received her PhD in Atmospheric Science from the Department of Geophysics Atmospheric and Planetary Science and the Porter School of Environmental Studies at Tel Aviv University in Israel. Before joining TTU she was a Postdoctoral Associate in the Department of Earth Atmosphere and Planetary Sciences at the Massachusetts Institute of Technology, and later a Postdoctoral Fellow in the Department of System Biology in Harvard Medical School at Harvard University. To learn more about Dr. Ardon-Dryer's work, visit the [Aerosol Group website](#).

This event is free & open to the public. Free lunch will be provided to the first 50 attendees. No RSVP is necessary.

For more information about the Global Health Lecture Series, contact the Office of Global Health at  
806-743-2901 or [globalhealth@ttuhsc.edu](mailto:globalhealth@ttuhsc.edu).

Persons needing assistance should contact the Office of Global Health for arrangements.