Bio:

I’ve always been interested in science, nature, and the way things worked. From being left behind in a creek bed on a kindergarten field trip, to science classes in high school, I always knew I wanted to study science. After earning BS in Biochemistry from the University of Notre Dame, I was going to go to graduate school and study pharmaceutical development. Plans changed after a year of volunteer work in Kenya, and I decided to change focus and started at the University of Colorado where I earned a Ph.D. in Atmospheric Science, funded in part by a fellowship from the US EPA. As a graduate student I got to travel to Europe, Mexico, Canada, and many parts of the US measuring tiny particles in the atmosphere. At this point I had fallen in love with mountains, and decided to take a NSF sponsored post-doctoral position at the Paul Scherrer Institute in Switzerland, so I could continue to enjoy the views and activities that mountains provide. Two and a half years later, I returned to the US for an AAAS Science Policy Fellowship position where I worked at the EPA in Washington, DC. As interesting as Science Policy can be, I missed the lab work and in 2011 I started as an Assistant Professor at Drexel University, where I have a joint appointment between Environmental Engineering and Chemistry and am a member of the Drexel Air Resources Research Laboratory (DARRL).

“The Atmosphere as a Laboratory: Aerosols, Air Quality, and Climate”

Abstract:

The Earth's atmosphere accepts, processes, and transports emissions of gases and particles from both human activity and natural processes. Human activities include industrial facilities, cooking, driving our cars, and electrical power generation. Natural emissions can come from volcanoes, forests, swampland, to name a few. The emissions of these activities have different chemical "fingerprints". For example car emissions are chemically different than forest fire emissions. Once emissions are in the atmosphere they undergo a variety of chemical reactions depending on the species, changing them from their initial composition. Thus, by making detailed chemical measurements of atmospheric particles (also called aerosols), we can trace the life of these particles. While knowing where these particles come from is important, we are also interested in the composition of these particles since they have an important role in the Earth's climate system and can negatively impact air quality and health. Atmospheric particles are linked to increased rates of asthma, death, and other negative health impacts. This talk will discuss how scientists explore the atmosphere as a laboratory and make measurements of atmospheric gases and particles all over the world, from ground sites, mobile laboratories, and airplanes.