

Special Seminar

Ann Dillner

Visiting from the University of California, Davis

**Using infrared spectroscopy to characterize
the carbonaceous and inorganic composition
of aerosol filter samples collected in U.S.
and international monitoring networks**

Hosted by Amy Sullivan

**2 p.m. Monday, May 6
ATS 101**

Fourier Transform Infrared Spectroscopy (FT-IR) is a non-destructive and inexpensive method for characterizing aerosol routinely collected on Teflon filters in monitoring networks as well as in field campaigns and source samples. Using three FT-IR instruments, UC Davis collects spectra from all Teflon samples collected in the Interagency Monitoring of Protected Visual Environments (IMPROVE), and the Chemical Speciation Network (CSN) and has recently begun collecting spectra from the Surface Particulate Matter Network (SPARTAN), an international monitoring network. In addition, we have analyzed 8 years of Southeastern Aerosol Research and Characterization Network (SEARCH) samples. The collected FT-IR spectra are information-rich and can be mined for measuring many components and characteristics of PM including TOR-equivalent organic (OC) and elemental carbon (EC), organic functional groups, organic matter (OM) and OM/OC, inorganic ions, some element-oxygen bonds such as Si-O, and source attribution.

In this talk, Dr. Dillner will share the state of the art capabilities for predicting FT-IR OC and EC in CSN, IMPROVE, and Federal Reference Method (FRM) PM_{2.5} samples, measuring functional groups and OM in the SEARCH work, and evaluating of source samples and identifying sources in ambient samples.