

# SEMINAR

## Characterizing variations in atmospheric composition over the period 270 - 2013 AD: Measurements of a Greenland ice core

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### **Abstract:**

Chemical analyses of trace species present in ice cores are routinely used to investigate the impact of natural variation and anthropogenic influence on past environment and climate. Much of this previous work has focused on characterizing the inorganic species in the cores, including sulfate, nitrate, ammonium, and black carbon, while the organic species have received relatively less attention. In part this is due to the chemical complexity and low abundance of the organic species, which makes identification and quantification difficult. In this work, we use high-resolution mass spectrometry to measure the soot, inorganic, and organic species present in an ice core from Northern Greenland that spans from 269 AD to 2013 AD. We examine the bulk organic composition and use tracer ions and co-variance with inorganic species to identify how the organic matter is influenced by biomass burning, marine emissions, and anthropogenic emissions. Additionally, we discuss how the composition and abundance of reactive nitrogen has changed over this time period and how these changes motivate our current research on organic nitrogen chemistry.

**Date: Monday, February 8, 2016**  
**Time: 3:15 refreshments; 3:30 seminar**  
**FL2-1022, Large Auditorium**

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