

# Physics Colloquium

## Michigan Technological University

Thursday, September 9th, 2010

4:00 pm

Room 139 Fisher Hall



### Science and Outreach at Storm Peak Laboratory

Gannet Hallar

Desert Research Institute  
Storm Peak Laboratory

This lecture is partially sponsored/funded by the  
Visiting Women & Minority Lecturer Series

**Abstracts:** Atmospheric Aerosols (small particles suspended in the air) have an important impact on climate and air quality. The effects on climate are uncertain due to the complex physical and chemical processes involved in aerosol emission, mixing, transport and aging. Aerosols are believed to offset part of the warming effect due to the anthropogenic CO<sub>2</sub> emissions; however, the strength and the exact mechanism of this offset are not clear and scientific investigation is underway worldwide. An important phenomenon is atmospheric aerosol formation, the production of nanometer-size particles by nucleation and their growth to detectable sizes. Storm Peak Laboratory is located on the west summit of Mt. Werner near Steamboat Springs in Colorado. This site has been used in aerosol studies for more than 25 years. Aerosol nucleation at Storm Peak Laboratory occurred 62% of measurement days, including cloud events. This work will compare and contrast days with and without nucleation events, by investigating the radiation and meteorological conditions present. The results presented will provide further insight to the production of aerosols via nucleation.

**Bio:** Dr. Hallar's research interest is studying anthropogenic effects on climate using innovative in situ measurement techniques for atmospheric constituents. She currently directs Storm Peak Laboratory, a permanent mountain-top facility which offers the ability to make time-extended observations of free tropospheric and in-cloud conditions. In addition to the research at Storm Peak Laboratory, Dr. Hallar currently directs two NSF funded programs to enhance diversity and collaboration among atmospheric scientists. Atmospheric Science Collaborations and Enriching NeTworks (ASCENT) is a program focusing on women in atmospheric science/meteorology and is designed to initiate positive professional relationships among female faculty of different ranks and postdoctoral researchers. Geoscience Research at Storm Peak (GRASP) is a program providing mentoring and exceptional field research experiences for a diverse group of undergraduate students.