

Central Arkansas Section meeting
7:00 pm, Thursday, November 5, 2009
Harding University, Searcy
McInteer Center 130
(Dinner with speaker at 5:30 pm—Chili's)

Speaker

Jeffrey S. Gaffney, Ph.D.
Chair and Professor of Chemistry
University of Arkansas at Little Rock

Climate change is currently one of the most pressing environmental concerns for the global community. While Global Circulation Models (GCMs) do a reasonable job on large scales, there is need of significant improvement to be able to do regional climate modeling that is needed for communities to plan effectively for the future. These regional models include precipitation as well as temperature predictions that requires that the radiative forcing due to greenhouse gases, aerosols, and the formation of clouds and their lifetimes be well understood. Atmospheric aerosols play an important role in direct radiative forcing and also are important for the formation of clouds. Clouds and aerosols have been identified as some of the largest uncertainties in climate forcing by the Intergovernmental Panel on Climate Change (IPCC). Key to understanding the role of aerosols is determining their lifetimes, their radiative properties, and their sources (particularly for carbonaceous aerosols). The role of aerosols in climate change will be discussed, and work highlighted from UALR that is currently looking at aerosol optical properties, and using natural radioactivity to trace sources and lifetimes of aerosols. The importance of biogenic sources, i.e. biomass burning and secondary organic aerosol formation from reactive biogenic volatile organics will be highlighted and results from some recent field studies examined that include work from Mexico City, Chicago, Little Rock, and samples from a mountain top in Oregon. This work has been supported by the Department of Energy's Atmospheric Systems Research in the Climate Change and Environmental Science Division of the Biological and Environmental Research Office in the Office of Science.

Jeff Gaffney is currently Chair/Professor of Chemistry at the University of Arkansas at Little Rock. Before joining UALR in July of 2006 he spent over 30 years in three of the Dept. of Energy National Labs (Brookhaven, Los Alamos, and Argonne) after obtaining his doctorate in chemistry from the University of California, Riverside under the direction of Dr. James N. Pitts, Jr. He is well known for his published work in Atmospheric and Environmental Chemistry, and is member of the American Chemical Society Committee on Chemistry and Public Affairs (CCPA) and chair of the sub-committee on Policy for CCPA. He is also member of the American Meteorological Society, American Geophysical Union, and American Association for the Advancement of Science.