

Fundamentals of Air Pollution as Applied to the Salt Lake-Provo Airshed

Presenter: Charles O. Stanier

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University of Iowa

Time: Thursday July 30, 9:00 am – 2:00pm (lunch included)

Room: 305

IEEE PDH Credit Available

Abstract

In this four hour course, the scientific fundamentals of air pollution will be taught, including

- (i) the chemical constituents that make up clean and polluted air;
- (ii) the processes that control concentrations in the atmosphere (emissions, chemical transformation, physical transformation, and meteorology); and
- (iii) introduction to the health effects of air pollution.

Similarities and differences between polluted areas with high reactive nitrogen concentrations (e.g., central California, Salt Lake-Provo, the upper Midwest, and some locations in Europe and Asia) will be discussed. To reach a broad audience, Dr. Stanier will combine case studies with traditional slides and notes that cover essential fundamentals. Time permitting, the physics model ISORROPIA will be used to simulate a key balance between reactive gases, aerosols, and water that is important in locations like Utah.

Speaker:

Charles O. Stanier is currently an Associate Professor in the Department of Chemical and Biochemical Engineering, and a member of IIHR Hydroscience and Engineering Institute.

His research interests are in fundamental and applied issues in air pollution, climate science, and aerosol science. Dr. Stanier leads investigations focused on these systems using field measurements, 3D models, and parcel models to understand inorganic and organic aerosols. Specific applications have included comprehensive evaluation of air quality in the Midwestern U.S., and measurement of ultrafine particles and secondary aerosol precursors in Mexico City, Iowa City IA, and Bondville IL.



He is the recipient of the NSF CAREER, the Walter R. Rosenblith young investigator award of the Health Effects Institute, the Univ. of Iowa Collegiate Service Award, and the Sheldon K. Friedlander award by the American Association for Aerosol Research. Prior to pursuing an academic career path, Dr. Stanier worked in industry for 5 years, as an environmental engineer and supervisor. Dr. Stanier holds a professional engineer license.