



Lecture Abstract:

Airborne particles are well known to have significant impacts on visibility, health and climate. As a result, being able to predict their formation, composition and properties is critical for the development of effective air pollution control strategies on local to global scales. While a great deal is known about gas phase chemistry in air, less is known about chemistry in condensed phases and even less about “heterogeneous chemistry” at interfaces, yet the latter two are particularly important for understanding airborne particles. Some examples of what we know and what we don’t know about such chemistry will be discussed, with an emphasis on the need for application of a variety fundamental chemical approaches, both experimental and theoretical, to address the key unknowns.



Schedule

3:30 - 4:00 PM, CP-137

Reception for Dr. Finlayson-Pitts.
Enjoy refreshments and informal conversation with our speaker.

4:00 PM, CP-139

Introduction of our speaker by
Professor Marcelo Guzman

4:00 - 5:00 PM, CP-139

Understanding Interfaces in Air: The
Last Frontier in Atmospheric Chemistry?

Barbara J. Finlayson-Pitts

Professor of Chemistry
University of California, Irvine

The Department of Chemistry wishes to
acknowledge the generous support of the
Lyle Ramsay Dawson Lecture Series
by Venita Dawson Curry.

All events are being held in the University of
Kentucky’s Chemistry-Physics Building.
Maps of the campus and parking
information are available on the web at:
www.uky.edu/CampusGuide/

For more information on the
Dawson Lecture Series visit our web site at:
[http://chem.as.uky.edu/lyle-dawson-
lecture-series](http://chem.as.uky.edu/lyle-dawson-lecture-series)

Questions and comments can be directed to
Prof. Marcelo Guzman, (859) 323-2892 or
marcelo.guzman@uky.edu.

The Sixteenth Annual

LYLE RAMSAY DAWSON LECTURE

established in memory of
Professor Lyle Ramsay Dawson
Distinguished Professor and
former Chair of the Department of Chemistry



UNIVERSITY OF KENTUCKY
DEPARTMENT OF
CHEMISTRY

Understanding Interfaces in Air: The Last Frontier in Atmospheric Chemistry?

Barbara J. Finlayson-Pitts
University of California, Irvine

**Friday, October 19, 2012
4:00 PM**

Room CP-139
Chemistry-Physics Building
Department of Chemistry
University of Kentucky



Lyle Ramsay Dawson was a native of Illinois and received his undergraduate degree from the University of Illinois in 1932. He received his Ph.D. degree in 1935 from the University of Iowa. Dr. Dawson served in

several academic positions in Illinois, Wisconsin, Nebraska and Louisiana and also worked on the Manhattan project as a Research Chemist and Group Leader in the Metallurgical Laboratory at the University of Chicago. In 1946, he was awarded the War Department's Certificate of Merit and a U.S. patent for his efforts on the Manhattan project which led to the discovery of a fundamental process for the extraction and purification of the elements plutonium and neptunium. He was a member of the committee that organized the Oak Ridge Institute of Nuclear Studies and was a council member of the Institute.

Professor Dawson came to the University of Kentucky in 1945 as Chair of the Department of Chemistry. He provided key leadership in initiating and building the doctoral program in Chemistry at the University. For example, in his first decade in the department, he individually obtained the major portion of extramural research support. During his twenty-five years with the Department, he held contracts for fundamental chemical research with the U.S. Army, the National Science Foundation and the Atomic Energy Commission.

He directed or codirected seventeen Ph.D. dissertations and nine M.S. theses. He was a talented research director and had a special ability to imbue his students with a concise, clear and complete scientific writing style. He published more than fifty research papers dealing with the chemistry of nonaqueous solutions and coauthored a reference book on the subject.

Dr. Dawson was a master teacher both in the classroom and in less formal conferences and discus-

sions. His leadership and mentoring led many graduate teaching assistants and junior faculty members to become more effective teachers. His uncompromising devotion to high achievement standards in coursework, research, education and training set the tone for our department for years to come.

Another significant contribution to the Department was Professor Dawson's indefatigable advocacy for a new chemistry building. His leadership in soliciting and designing a replacement for the former chemistry building, Kastle Hall, culminated in the opening of the current Chemistry-Physics Building in 1963.

He also served the campus community in other ways. Dr. Dawson was elected a Distinguished Professor in the College of Arts and Sciences in 1954-1955, and was appointed to the rank of Distinguished Professor in the field of Physical Chemistry by the University of Kentucky Board of Trustees in 1956. He served as Acting Dean of the Graduate School in 1954-1955, 1956 and 1960-1961.

Dr. Dawson's contributions outside the University were well recognized. He was a Fellow of both the American Institute of Chemists and the American Association for the Advancement of Science. He was a member of the American Chemical Society, Electrochemical Society, Sigma Xi, Omicron Delta Kappa, Alpha Chi Sigma and Kappa Delta Pi, serving leadership roles in each of these organizations. He served several times as a Tour Lecturer and Visiting Scientist under the sponsorship of the American Chemical Society. He was also active in a variety of other nonacademic organizations.

Dr. Dawson's twenty-five years in the department represent a truly outstanding combination and balance of administrative leadership, teaching, research and service. Although Dr. Dawson passed away in 1976, his impact on the department continues to this day as we continue our evolution into a top-twenty research institution. The endowment of the Lyle Ramsay Dawson Lecture Series by his beloved daughter, Venita Dawson Curry, permits us to rejoice in this legacy and to continue our tradition of world-class chemical research.



Barbara J. Finlayson-Pitts is Professor of Chemistry at the University of California, Irvine. She did her undergraduate degree at Trent University in Canada, and her M.S. and Ph.D. at U.C. Riverside. She

joined the faculty in the Department of Chemistry and Biochemistry at Cal State Fullerton in 1974, and in 1994 moved to UC Irvine. Her research focuses on experimental studies of reactions that occur in the atmosphere, particularly those between gases and particles and/or thin water films on surfaces such as buildings, vegetation etc. Professor Finlayson-Pitts is author or coauthor of more than 150 scientific publications and two books on atmospheric chemistry. She has mentored many students from undergraduates to graduate students, as well as postdoctoral fellows who have gone on to pursue a wide variety of careers. Professor Finlayson-Pitts' research and teaching have been recognized by a number of awards, including the 2004 American Chemistry Society Award for Creative Advances in Environmental Science & Technology, election as a Fellow of the American Association for the Advancement of Science and the American Geophysical Union, and election to the American Academy of Arts & Sciences and the National Academy of Sciences.