# Department of Chemical Engineering

# WILLIAM G. LOWRIE LECTURESHIP

## 2004 Lecturer

## Dr. John H. Seinfeld

**Louis E. Nohl Professor**
**California Institute of Technology**

**LECTURE I, 11:30, April 29, 2004 – Room 207, Koffolt Lab**
**LECTURE II, 2:30, April 30, 2004 – Room 320, Schoenbaum Hall**

**The Ohio State University**
**Department of Chemical Engineering**
**140 W. 19th Avenue**
**Columbus, Ohio**

## 2004 William G. Lowrie Lecturer
## John H. Seinfeld
## Louis E. Nohl Professor
## California Institute of Technology

John H. Seinfeld is the Louis E. Nohl Professor in the Divisions of Chemistry and Chemical Engineering and Engineering and Applied Science at the California Institute of Technology. He is a graduate of the University of Rochester, where he received a B.S. degree in chemical engineering, and of Princeton University, where he received a Ph.D. in chemical engineering. Professor Seinfeld is widely acknowledged for his research on the chemistry and physics of the atmosphere. Through both experimental and theoretical studies, he has made numerous contributions to our knowledge of the chemistry of the urban atmosphere, the formation, growth, and dynamics of atmospheric aerosols, and the role of aerosols in climate. Professor Seinfeld has received numerous honors and awards. He is a member of the U.S. National Academy of Engineering and a Fellow of the American Academy of Arts and Sciences. He received the 1970 Donald P. Eckman Award of the American Automatic Control Council, a 1972 Camille and Henry Dreyfus Foundation Teacher-Scholar Grant, the American Society for Engineering Education's Curtis W. McGraw Award (1976) and George Westinghouse Award (1987), the American Institute of Chemical Engineers Allan P. Colburn Award (1976), Institute Lectureship (1980), William H. Walker Award (1986), and Warren K. Lewis Award (2000). He received the 1980 NASA Public Service Award and a Special Creativity Award from the National Science Foundation, the 1993 American Chemical Society Award for Creative Advances in Environmental Science and Technology and the 2001 Nevada Medal, as well as the Fuchs Award of the International Aerosol Research Assembly in 1998, an award given every four years and considered the highest honor bestowed for work in the field of aerosol science. He is a Fellow of the American Association for the Advancement of Science and the American Geophysical Union and was President of the American Association for Aerosol Research. He also received the University of Rochester's Distinguished Alumnus Award. He was chairman of the NASA Working Group on Scientific Research Objectives in Tropospheric Pollution and served on the EPA Clean Air Scientific Advisory Committee and the NASA Advisory Council. He was chairman of the National Research Council Committee on Tropospheric Ozone Formation and Measurement and of the NRC Panel on Aerosol Radiative Forcing and Climate and is currently Vice Chair of the NRC Committee on Atmospheric Chemistry. Professor Seinfeld is the author of numerous scientific papers and books, including *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change* (1998). He is the recipient of honorary doctorates from the University of Patras (Greece) and Carnegie Mellon University.

## Lowrie Lectureship
## Honors Banquet

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| 6:00-6:30 | Reception |
| 6:30 | Welcome - Dr. Stuart L. Cooper, Chair |
| 6:40 | Buffet Dinner |

AWARDS PROGRAM

**LOWRIE LECTURESHIP AWARD**

Introduction: Dr. Stuart L. Cooper
Awardee: Dr. John H. Seinfeld

**Recognition of (retiring) AIChE Student Chapter Officers**

Officers: Daron Diener – President; Nzinga Turner – Vice President; Julie Makutonin – Treasurer; Imogen Pryce – Secretary; Zachary Schank – Webmaster; Lori Engelhardt – Philanthropy Chair; Andrew Maynard – Membership Chair; C.J. Roebuck – Historian; Sylena Smith – Publications Chair; Matt Ducay – Social Chair
Presenter: Professor Kurt Koelling

AIChE STUDENT AWARD

**AIChE Central Ohio Section Outstanding Student Award**

Awardee: Daron Diener
Presenter: Professor Kurt Koelling

**Donald F. Othmer AIChE Sophomore Academic Excellence Award**

Awardee: Nathan Ford
Presenter: Professor Kurt Koelling

RECOGNITION OF CEGC OFFICERS

Officers: Robin Ng, Anli Ouyang, Bartev Sakadjian, Tiffany Schofield, Matt Yung
Presenter: Professor Winston Ho

DEPARMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING AWARDS

**Outstanding Undergraduate Award for Research Excellence**

Awardee: Erica Jones
Presenter: Professor Jim Rathman
Awardee: Imogen Pryce
Presenter: Professor L.S. Fan
Awardee: Ee Hui Tan
Presenter: Professor L.S. Fan

**Outstanding Graduate Award for Academic Achievement**

Awardee: Thomas Abraham
Awardee: Shubhaya Basu
Awardee: Wen-Shiang Chen
Awardee: Hongbo Li
Awardee: Paul Matter

Awardee: Alissa Park
Awardee: Yangzhong Tang
Awardee: Liqun Xu
Awardee: Yong Yang
Presenter: Professor Winston Ho

**Outstanding Postdoctoral Award for Research Excellence**
Awardee: Xia Cao
Presenter: Professor Dave Tomasko
Awardee: Ling Li
Presenter: Professor Dave Tomasko
Awardee: Xueqin Wang
Presenter: Professor Umit Ozkan

CHEMICAL AND BIOMOLECULAR ENGINEERING ALUMNI SOCIETY AWARDS

**Outstanding Senior Award for Academic Excellence**
Awardee: Nicholas Brunelli
Awardee: Matthew Ducay
Awardee: Kurt Frey
Awardee: Megan Miller
Presenter: Professor Dave Tomasko and Doug Moss if available

**Outstanding Sophomore Award for Academic Excellence**
Awardee: Nathan Ford
Awardee: Thomas Malott
Presenter: Professor Dave Tomasko and Doug Moss if available

DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING AWARD

**Co-Op Award**
Awardee: Imogen Pryce
Presenter: Professor Dave Tomasko

DOW CHEMICAL

**Dow Outstanding Junior Award**
Awardee: Imogen Pryce
Presenter: Rich Brandon

AMERICAN INSTITUTE OF CHEMISTS FOUNDATION AWARDS

**AIC Outstanding Graduate Students**
Awardee: Clayt Robinson
Presenter: S.T. Yang
Awardee: Ying Zhang
Presenter: Jack Zakin

**AIC Oustanding Postdoctoral Award**
Awardee: Himanshu Gupta
Presenter: Professor L.S. Fan

CLOSING REMARKS – Professor Stuart L. Cooper

## William G. Lowrie Lectures
## OSU Department of Chemical Engineering
## Lecturer: John H. Seinfeld

**Lecture I: April 29, 2004**
**Room 207, Koffolt Lab, 11:30 AM**

**LECTURE I: Aerosols and Climate**

The accumulation of greenhouse gases in the earth's atmosphere is leading to global climate change. Particles in the air and aerosols exert complex and important effects on climate as well. In order to more accurately predict future climate, the aerosol effects must be understood. I will present a general survey of the climatic role of airborne particles.

**EVERYONE IS WELCOME TO ATTEND THE LECTURES**

**Lecture II: April 30, 2004**
**Room 320, Schoenbaum Hall, 2:30 PM**

**LECTURE II: Both Sides Now: The Art and Science of Clouds**

Clouds have preoccupied artists, poets, and playwrights throughout the ages. Clouds are the most visible manifestation of the ceaseless flow of water between the earth and sky. Clouds and water ultimately will determine the direction and severity of climate change on the planet. In an interplay of art and practicality, I will give an introduction to cloud physics and climate.

***The William G. Lowrie Lectureship was established in the Department of Chemical Engineering at The Ohio State University on October 1, 1995, to honor William G. Lowrie, a distinguished alumnus. The lectureship is awarded once each year to an individual who has made outstanding contributions to fundamental or applied research in the field of chemical engineering.***

**-1998 Lecturer-**
James Wei
Dean, College of Engineering and Applied Sciences,
Pomeroy and Betty Perry Smith Professor,
Department of Chemical Engineering
Princeton University

**-1999 Lecturer-**
Judson King
Professor of Chemical Engineering
Provost and Senior Vice President of Academic Affairs
University of California, Berkeley

**-2000 Lecturer-**
Robert Langer
Kenneth J. Germeshausen Professor of Chemical and Biomedical Engineering
MIT

**-2001 Lecturer-**
Roy Jackson
Emeritus Professor of Engineering and Applied Science
Princeton University

**-2002 Lecturer-**
Alexis T. Bell
Professor
University of California, Berkeley