2016-17 AEESP Foundation

DISTINGUISHED LECTURER SERIES

Menachem Elimelech, Yale University

November 14, 2016

HOSTED BY:
Northeastern University, Department of Civil and Environmental Engineering

CO-HOSTED BY:
Tufts University, Harvard University

EVENT DESCRIPTION

Prof. Menachem Elimelech will be visiting Northeastern University on Monday, November 14 as part of his AEESP Foundation Distinguished Lecture Series. **Faculty members and graduate students in environmental engineering and science in the greater Boston area are invited to participate in this day.**

The lecture will take place from 4:30-5:30 pm with a reception to follow; both lecture and reception are open to the public. A poster session for graduate students and faculty will take place immediately prior to the lecture. One group discussion with graduate students and one group discussion open to faculty members will take place in the morning and the afternoon, respectively. Faculty and graduate students may explore local restaurants for lunch and dinner.

Northeastern AEESP | Association of Environmental Engineering & Science Professors

DISTINGUISHED LECTURE

Lecture: *High-Performance Membranes for Energy-Efficient Desalination and Wastewater Reuse.*

Abstract: Water scarcity is one of the greatest global crises of our time. Increasing water supply beyond what is obtainable from the hydrological cycle can be achieved by seawater desalination and wastewater reuse. Highly effective, low-cost, robust technologies for desalination and wastewater reuse are needed, with minimal impact on the environment. Recent advances in the science and technology of desalination and wastewater reuse will be presented, focusing on membrane-based processes. Major developments in these technologies are possible due to recent advances in materials science, nanotechnology, and the fundamental understanding of the solid-water interface. In this presentation, we will show how we can exploit novel nanomaterial and polymer architectures to develop better approaches to design and fabricate membranes. By integrating the facile processability, light-weight, and low-cost features of organic polymers with functionality provided by inorganic nanostructures, we can develop a new membrane materials platform with applications in desalination and wastewater reuse. Among the examples that will be discussed in this presentation are the development of antifouling membranes, biofouling-resistant membranes, and next-generation membranes that overcome inherent limitations of existing technologies.

Biographical Sketch: Menachem (Meny) Elimelech is the Roberto Goizueta Professor at the Department of Chemical and Environmental Engineering at Yale University. His research is in the general area of the water-energy nexus, including (i) membrane separations for desalination and wastewater reuse, (ii) environmental applications of nanomaterials, and (iii) water and sanitation in developing countries. Professor Elimelech has received numerous awards in recognition of his research. Notable among these are his election to the National Academy of Engineering in 2006, the Eni Prize for 'Protection of the Environment' in 2015, and the Clarke Prize for excellence in water research in 2005. He has also been recognized as a Thomson Reuters Highly Cited Researcher in two categories: Environment/Ecology and Chemistry. Professor Elimelech has advised 35 Ph.D. students and 24 postdoctoral researchers, many of whom hold leading positions in academia, government, and industry. In recognition of his teaching and mentoring excellence, he received the W.M. Keck Foundation Engineering Teaching Excellence Award in 1994, the Yale University Graduate Mentoring Award in 2004, and the Yale University Postdoctoral Mentoring Prize in 2012.

Menachem (Meny) Elimelech, PhD

Roberto Goizueta Professor, Chemical & Environmental Engineering

Yale University , USA

Yale University

Education

- **PhD, Environmental Engineering, *THE JOHNS HOPKINS UNIVERSITY***
- **M.Sc., Environmental Science & Technology, *THE HEBREW UNIVERSITY, JERUSALEM***
- **B.Sc., Soil and water sciences, *THE HEBREW UNIVERSITY, JERUSALEM***

Research Interests

- **Water-Energy Nexus**
- **Membrane Separations for Desalination and Wastewater Reuse**
- **Environmental Applications of Nanomaterials**
- **Water and Sanitation in Developing Countries**

Selected Service and Awards

- **Election, National Academy of Engineering, 2006**
- **Eni Prize for 'Protection of the Environment', 2015**
- **W.M. Keck Foundation Engineering Teaching Excellence Award,1994**
- **Yale University Graduate Mentoring Award,2004**
- **Yale University Postdoctoral Mentoring Prize, 2012.**