



COLLEGE OF ENGINEERING DISTINGUISHED SEMINAR



David A. Dzombak, P.E.
Hamerschlag University
Professor and Head
Civil and Environmental
Engineering, Carnegie
Mellon University

Climate Change Adaptation for Infrastructure: A Grand Challenge for Civil and Environmental Engineering

**Thursday
February 2, 2017**
168 Snell Engineering
3:00 p.m.

Reception following
4:00 p.m. – 5:00 p.m.
4th Floor Lobby
Snell Engineering Center

*Hosted by the **Department of Civil and Environmental Engineering***

Abstract: The climate is changing globally and across the U.S., with different types and extent of change in different regions. Observed changes include sustained deviation from long-term trends in atmospheric temperatures, water temperatures, precipitation amounts, drought duration, storm frequency, wind velocities, snow melt timing, flood frequency and characteristics, permafrost melting, and other phenomena. These changes are affecting civil and environmental infrastructure and leading to demand for infrastructure modification.

Climate change adaptation for infrastructure is critical for civil and environmental engineering, and communities, in the 21st Century. Climate change adaptation is an area of significant focus in the earth science and climate science academic communities. However, there has been limited engagement by engineers in climate change adaptation, mostly in relation to coastal issues. Much more engagement and leadership of civil and environmental engineers is needed across the broad spectrum of relevant infrastructure issues.

Civil and environmental engineers need to be prepared to lead in answering questions about risks of and responses to climate change.

Bio: David Dzombak is the Hamerschlag University Professor and Head of the Department of Civil and Environmental Engineering at Carnegie Mellon. The emphasis of his research and teaching is on water quality engineering and energy-environment issues. His current research is focused on climate change adaptation for infrastructure, interbasin water transfer, recovery of rare earth elements from brines, and the concept of sustainable mining.

Dzombak serves on the National Academies Water Science and Technology Board, the Roundtable on Science and Technology for Sustainability, and the Roundtable on Unconventional Hydrocarbon Development. He is a registered Professional Engineer in Pennsylvania, a Board Certified Environmental Engineer by the American Academy of Environmental Engineers and Scientists, and a member of the National Academy of Engineering.

For more information visit: northeastern.edu/coe



David A. Dzombak, Ph.D., P.E., BCEE, NAE

**Hamerschlag University Professor and Department Head,
Civil and Environmental Engineering,**

CARNEGIE MELLON UNIVERSITY

Education

- **PhD in Civil Engineering, *MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 1986***
- **M.S. in Civil Engineering, *CARNEGIE MELLON UNIVERSITY, 1981***
- **B.S. in Civil Engineering, *CARNEGIE MELLON UNIVERSITY, 1980***

Research Interests

- **Aquatic chemistry**
- **Fate and transport of chemicals in water, soil, and sediments**
- **Climate change adaptation for infrastructure**
- **Water resource remediation, restoration, and sustainability**

Selected Service and Awards

- **Science Advisory Board – EPA and DOD Strategic Environmental Research and Development**
- **Distinguished Service Award from the Association of Environmental Engineering and Science Professors (AEESP)**
- **Simon W. Freese Environmental Engineering Award from the American Society of Civil Engineers (ASCE)**