

CEE Seminar

Agents of Change for Resilient Infrastructure



Tom O'Rourke

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**Tuesday,
February 12
McManus Lounge
166 Hollister Hall
4:30 PM**



ABSTRACT

The effects of hurricanes with respect to infrastructure resilience are reviewed briefly with reference to Hurricanes Katrina and Sandy. The effects of Hurricane Sandy on New York City and subsequent programs to improve the City's infrastructure are described. Special attention is focused on the restoration of the L Line Tunnel, which was flooded by Hurricane Sandy. Professor O'Rourke will describe how a team from Cornell and Columbia Universities was assembled at the request of Governor Andrew Cuomo to help re-engineer a \$1/2 billion project to rehabilitate the tunnel, and still keep the subway in service. The new approach integrates several advanced technologies, including distributed fiber optics and LiDAR, and makes a breakthrough in infrastructure restoration resulting from interdisciplinary work between civil and electrical engineers. The agents of change that lead to improved policies and approaches are explored, including the technical, institutional, and social challenges of introducing new technologies and engaging community support.

BIOGRAPHY

Tom O'Rourke is the Thomas R. Briggs Professor of Engineering in the School of Civil and Environmental Engineering at Cornell University. He is a member of the US National Academy of Engineering, Distinguished Member of ASCE, International Fellow of the Royal Academy of Engineering, Member of the Mexican Academy of Engineering, and a Fellow of the American Association for the Advancement of Science. He authored or co-authored over 390 technical publications, and has received numerous awards for his research. His research interests cover geotechnical engineering, earthquake engineering, underground construction technologies, engineering for large, geographically distributed systems, and geographic information technologies and database management. He served on government advisory boards, as well as the consulting boards or peer reviews for many projects associated with highway, rapid transit, water supply, and energy distribution systems.