



**Presented By:**  
**Troy Morgan, Ph.D., P.E.**  
**Managing Engineer**  
*Exponent*  
New York

# Civil Engineering *Seminar Series*

*Thursday, February 4th, 2016*  
**MDEA**  
**2:00PM - 3:00PM**

## **Technical Consulting: The Intersection Of Mythbusters, CSI & Civil Engineering**

The modern era of civilization is marked by immense networks of complicated, interdependent systems and rapidly evolving technologies. Many of these technologies, while born from academia, are implemented and refined in the world of industry. As today's complex ideas are put into practice, there is an increasing tendency for things to fail, and a urgent desire to prevent such failures. This is the realm of technical consulting, and the subject of this talk. Several projects from structural engineering, including nuclear reliability analysis, earthquake reconnaissance, and storm surge analysis are presented to highlight the broader role of technical consultants in a world which increasingly depends on sophisticated engineering to protect itself from both natural and human-induced catastrophe.



Troy Morgan is Managing Engineer in the Buildings and Structures practice at the New York office of Exponent. Dr. Morgan is a recognized expert in the field of seismic isolation and passive energy dissipation systems, and specializes in performance of structures under extreme loading such as earthquakes, wind, flood, and explosions. He has performed extensive research on the numerical simulation and experimental behavior of innovative seismic protective devices and optimization of their use within performance-based engineering frameworks. Dr. Morgan has served as a consultant to many engineering firms, assisting with the design of essential structures including healthcare facilities, laboratories, industrial buildings, and critical infrastructure requiring sophisticated analysis techniques and the applications of advanced seismic protective systems. He also has consulting experience with the nuclear power generating industry, evaluating seismic risk to existing structures and critical equipment through ground motion selection/scaling and nonlinear structural analysis including soil-structure interaction.

Dr. Morgan is also Adjunct Professor in the Tandon School of Engineering at New York University. Prior to joining Exponent, he was Assistant Professor at the Center for Urban Earthquake Engineering at the Tokyo Institute of Technology in Japan. Dr. Morgan has taught courses at the University of California, Berkeley, and San Francisco State University. He has also held positions as a post-doctoral researcher at the Pacific Earthquake Engineering Research Center and as a design engineer at Forell/Elsesser Engineers Inc.

