

**METROPOLITAN SECTION  
AMERICAN SOCIETY OF  
CIVIL ENGINEERS  
GEOTECHNICAL GROUP**

PRESENTS:  
**Technical Lecture**

TOPIC :  
**Recent Developments in  
Performance Based Seismic  
Design**

SPEAKER:  
Dr. Sissy Nikolaou, PE  
  
Mueser Rutledge Consulting  
Engineers

AT:  
**CUNY Graduate Center  
Recital Hall, New York City**

**Tuesday, February 15, 2011**  
Refreshments: 5:30 p.m.  
Lecture: 6:00 p.m.  
Attendance is free

**Professional Development Hours  
(PDHs) are Applied for -  
PDH certificates are free to ASCE  
members, \$10 fee for non-members**

CUNY Graduate Center-Recital Hall  
365 Fifth Avenue  
(Northeast corner of Fifth  
Ave. and 34<sup>th</sup> Street)  
New York City

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**LECTURE SUMMARY**

This lecture will present recent developments in geotechnical earthquake engineering design. Innovative concepts of performance based design, generally developed by the structural engineering community, could be used to better establish our approach to geo-seismic and soil-structure interaction problems. This approach would involve the establishment of: (i) ground motions for selected target seismic hazard levels and (ii) expectation of performance in terms of structural behavior for several conditions such as of collapse prevention or life safety. The speaker will discuss the applicability of this approach in the New York metropolitan area where the anticipated seismic shaking is moderate. However, prediction of design ground motions must address the unique and highly variable geologic conditions that could create remarkable soil amplification effects. This fact, combined with the lack of strong ground motion recordings, create an uncertainty in predicting response spectra and time histories that are used in design. The speaker will share her experience and the lessons learned from evaluating ground motions and soil structure interaction problems for critical projects in the region incorporating performance-based concepts.

*The Speaker:* Dr. Nikolaou is recognized as the leading authority for geo-seismic design in the New York metropolitan area. She is a Senior Associate with Mueser Rutledge Consulting Engineers (MRCE) where she established and leads a department focused on earthquake engineering services that include geophysical testing, site-specific seismic analyses, liquefaction hazard assessment, and soil-structure interaction modeling. Her recent projects include Hillview Reservoir Cover, Queensboro Bridge, Columbia University's Manhattanville, Brunsbuettel Nuclear Reactor, Mina Zayed in Abu Dhabi, and Woodrow Wilson Bridge in Washington DC. Dr. Nikolaou is a licensed Professional Engineer and a certified FEMA Search-Rescue Structural Specialist. She has a Diploma in Civil Engineering from National Technical University of Athens; her Master's and Ph.D. are from SUNY-Buffalo. She is serving our community by publishing extensively her work and being a member of several committees, including the recent NY Building Code, and the Board of Directors of ACEC-NY (American Council of Engineering Companies).

*Please note that in accordance with the ASCE Metropolitan Section's policy, please have your ASCE Member Number with you to avoid the \$10 PDH processing fee.*

**UPCOMING GEOTECHNICAL GROUP LECTURES:**

March 15, 2011	GZA Lecture
April 12, 2011	PB Lecture
May 12, 2011	One-Day Seminar