

## Bridge Engineering Distinguished Speaker Series

PRESENTED BY THE DEPARTMENT OF CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING AND MCEER

# Sustainable Development in Bridge Engineering: Development of Multi-Hazard Design Guidelines



### GEORGE C. LEE

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A new multidisciplinary research landscape has emerged involving just about all scientific and engineering disciplines concerning “sustainability” of the natural and built environments. The structural engineering profession is heavily involved in many distinct aspects of sustainable development such as construction materials, energy efficient buildings, and hazard resilience of physical infrastructure systems. This presentation gives an example by describing the concept and approach to formulate design guidelines of all-hazard resilient highway bridges in regions vulnerable to multiple extreme hazards, currently being carried out at the University at Buffalo, funded by the Federal Highway Administration.

In order to consider various extreme hazard load effects in bridge design, the reliability based approach is used to formulate design limit states. This FHWA project at MCEER is targeted to establish multi-hazard design principles and methodologies to systematically expand the current AASHTO LRFD specifications to include multiple hazards. Specific cases of design limit state equations will be developed as examples for continued further efforts. The presentation will only briefly provide a progress report on the process to establish “regionally based” design limit states.

### Biographical Sketch:

George Lee is a SUNY Distinguished Professor in the Department of Civil, Structural and Environmental Engineering. Previously, he had served as Chair of the Department of Civil Engineering and Dean of the School of Engineering and Applied Sciences (1978-95) at UB. Between 1992 and 2003 he served as Director of the Multidisciplinary Center for Earthquake Engineering Research (MCEER). He earned both his Ph.D. and M.S. degrees at Lehigh University, and his undergraduate degree from the National Taiwan University.

Dr. Lee has held leadership positions in numerous professional organizations in which he is a member, including: American Society of Civil Engineers, U. S. National Committee on Biomechanics, and Committee on Hazard Mitigation Engineering of the National Research Council. He is the recipient of numerous awards and citations including the Superior accomplishment award of the National Science Foundation and the Newmark Medal of the American Society of civil Engineers. Most recently, Dr. Lee received a 2006 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM).

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**Date / Time:** Monday, **November 29, 2010**, 5:00 – 6:15 pm Eastern Time

**Location:** Baldy Hall, 2<sup>nd</sup> Floor, Room 200G

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Call Michele (716) 645-3307 1.5 PDH (\$75)

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