

# UNIVERSITY of HOUSTON

## CULLEN COLLEGE of ENGINEERING

Department of Civil & Environmental Engineering

### CIVE 6111 Graduate Seminar Series

#### Michel Bruneau

Professor  
Civil, Structural and Environmental Engineering  
University at Buffalo, The State University of New York

#### Seismic Behavior of Concrete-Filled Steel Sandwich Walls (and Concrete-Filled Steel Tube Columns)

**Monday, October 20, 2014**

10:30 am - 11:30 am

Room: D3 W205

#### Abstract

Concrete-Filled Steel Plate Sandwich Walls (CFSP Sandwich Walls) can provide a cost-effective alternative to regular reinforced concrete shear wall construction, with faster construction time. As a result, combined with its recognized multi-hazard resistant properties, this composite system has the potential to transform seismic design in many applications. However, in spite of all the foreseen excellent attributes of the structural system, lack of knowledge on its expected seismic performance has been an absolute impediment to its implementation. An analytical and experimental research program funded by the American Institute of Steel Construction has been conducted at the University at Buffalo to provide data on seismic response and generate design recommendations. The results of this research project, in parallel to research results on the multi-hazard performance of concrete-filled steel tubes, are summarized. Both systems are appealing as ductile flexural walls and columns in bridges or in high-rise applications.

About the speaker:



**Dr. Michel Bruneau** has conducted extensive research on the design and behavior of steel structures subjected to earthquakes and blasts, and has received many awards for his work. This research has encompassed contributions to the development and large-scale experimental validation of various metallic energy-dissipating design concepts to enhance the resilience of structures against extreme events, including work on ductile steel plate shear walls, ductile bridge diaphragms, tubular eccentrically braced frames, structural fuses, and controlled-rocking piers. He has authored over 400 technical publications; in particular, he is the lead author of the textbook "Ductile Design of Steel Structures" that is widely used worldwide by structural engineers. Dr. Bruneau is an ASCE Fellow, a member of various AISC and CSA committees developing design specifications for bridges and buildings, has conducted numerous reconnaissance visits to disaster stricken areas, and has served as Director of MCEER. He has also participated in various expert peer review panels, project advisory committees, and special project design teams. A detailed outline of qualifications is available at [www.eng.buffalo.edu/~bruneau](http://www.eng.buffalo.edu/~bruneau).