GEOTECHNICAL GROUP
LOS ANGELES SECTION – ASCE

MEETING NOTICE
Wednesday, June 18th, 2014

REMOTE SENSING AND HEALTH ASSESSMENT OF CRITICAL INFRASTRUCTURE SYSTEMS

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Thomas Iovino Chair Professor,
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Rensselaer Polytechnic Institute

SOCIAL HOUR: 5:30 p.m.
DINNER: 6:30 p.m.
PROGRAM: 7:30 p.m.
PLACE: Stevens Steak House
5332 Stevens Place, City of Commerce
Southwest Corner of I-5 & Atlantic Boulevard
PRICE: $35 with reservation in-advance; $40 at the door; Students: Free with valid Student ID
CONTACT: Lisa Star – lisa.star@csulb.edu
ONLINE: http://lageoinstitute.com

Please make reservations prior to 12 noon, Friday, June 13th

Abstract:

Natural and man-made hazards are often associated with very costly damages to civil infrastructure systems, such as bridges, levees, dams, buried pipes and buildings of all types. The lack of high-quality field and/or lab data of soil response have eluded researchers and practitioners until recently. Recent advancements in remote sensing technology and physical modeling are leading to a new reality for health assessment of soil-structure systems. New and less expensive sensing technologies have enabled the development of innovative instrumentation and advanced interactive modeling tools. These tools, combined with recent advances in information technology, including Satellite imagery, wireless sensor networking and visualization, promise significant improvements in real-time monitoring of urban construction, sensor-assisted design and early warning of impending failure. The presentation will focus on following: a newly developed wireless *Shape-Acceleration Array* (SAA) sensor that measures multi-directional deformation and acceleration profiles; satellite-based interferometric synthetic aperture radar (InSAR) measurements; and health assessment framework that provides a comprehensive multi-scale monitoring and analysis for critical infrastructure. This framework relies on long-term continuous monitoring techniques that are minimally intrusive. The planned system would provide a long-term and continuous assessment of the health of soil-structure systems, allowing stake holders to prioritize repairs and rehabilitation efforts and assess the effectiveness of those efforts before a serious failure occurs.

Bio:

Tarek H. Abdoun received a B.S. degree from Cairo University and a M.S. and Ph.D. in Geotechnical Engineering from Rensselaer Polytechnic Institute (RPI). Dr. Abdoun is currently the Associate Dean for Research and graduate Education, as well as the Thomas Iovino Professor at RPI. He serves as the technical director for RPI's NEES Geo-Centrifuge Research Center. Dr. Abdoun has received many awards including the 2013 Chi Epsilon, The National Civil Engineering Honor Society, "***Excellence in Teaching"*** award for the Northeast Region. Recipient of RPI Board of Trustees' 2012 **"Outstanding Teacher Award"** for excellence in teaching; recipient of the **American Society of Civil Engineers (ASCE) Walter L. Huber Civil Engineering Research Prize** for 2009 outstanding contributions to the study of soil and soil-structure systems subjected to extreme events using centrifuge modeling and development of innovative filed instrumentation.; **winner of the international competition** for predicting levees response that included over forty competitors; recipient of "***Commander's Award for Public Service with accompanying medal***." one of the highest awards given by the US Army to Civilians who provided outstanding services to the US Army. This award is in appreciation for his support of the New Orleans Recovery research efforts; recipient of RPI's School of Engineering **Excellence in Teaching Award** for 2008; recipient of 2007 **Shamsher Prakash International Research Award** for young engineers, scientists and researchers for excellence in Geotechnical Earthquake Engineering. He is the winner of NEES Award for "***Best IT Innovation***" in 2007. He is the recipient of ***RPI's Institute 22nd Early Career Award*** for Outstanding Contribution in Teaching & Research for 2007. He is the winner of CSCE's (Canadian Society for Civil Engineering) ***Casimir Gzowski Medal*** for best journal paper for 2004.