The Department of Civil and Environmental Engineering at the University of Houston presents...

The CIVE 6111 Graduate Seminar Series

Mapping Terrorist Attacks, Species Evolution, Earthquakes and Lost Cities: Adventures and Lessons in Interdisciplinary Engineering

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2:30PM-3:30PM
Classroom Business Building (CBB) Room 118

Abstract

For more than 15 years the NSF National Center for Airborne Laser Mapping (NCALM), which operational branch has been part of the Department of Civil and Environmental Engineering at the University of Houston since 2010, has been supporting the broad scientific and research communities by providing accurate and high-resolution lidar and other types of geospatial data. Even before the formal establishment of NCALM its researchers have been pioneering in the application of lidar to many engineering and scientific research problems. This talk will provide an overview of some of these projects and lessons learned while pioneering lidar applications, from the mapping of the devastation at ground zero in New York caused by the 911 terrorist attacks, to revealing an ancient landslide which dammed a river and cause the evolution of a new fish species of fish, to the first high resolution mapping the ground deformation in 3D after a powerful earthquake in Baja California, to the highly reported news of the identification of ancient lost cities in Central America. Given that a new batch of new mass media stories are currently circulating related to the archaeological project that NCALM participated in 2016 which revealed impressive new details of the Maya civilization in Guatemala; a good portion of the talk will be devoted to sharing some of the insights the lidar provided to archaeologist working in the area.

Bio

Juan Carlos Fernandez-Diaz received his B.Sc. degrees in electrical and industrial engineering from the Universidad Nacional Autonoma de Honduras in 2001. He was awarded a Fulbright scholarship in 2005 to study his MSc (2007) in Geosensing Systems Engineering at the University of Florida in Gainesville, which was followed by a PhD (2010) in the same program at the University of Florida. Through his graduate education and current work as a Co-Investigator at the National Center for Airborne Laser Mapping, he has more than 10 years of academic and practical experience with scanning and mapping technology and applications with deployments in Mexico, Central America, New Zealand and Antarctica. Since 2012, he has coordinated, designed and led 18 archaeological prospection projects in Mexico and Central America, totaling over 5800 km^2 of mapped area of high-density lidar. Two of these projects have been featured in National Geographic media (web, print, and TV) including the Explorer episodes: The Lost City of the Monkey God and The Lost Treasures of the Maya Serpent Kings. He has co-authored 24 peer-reviewed papers, 11 refereed conference proceedings papers and more than 10 works published as books chapters and stories for professional and general audience magazines.