

# FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM



## Visit to University of Massachusetts Amherst: April 20, 2018

This report summarizes the visit of Sissy Nikolaou from WSP-Parsons-Brinckerhoff that took place at the University of Massachusetts Amherst on April 20, 2018,

### ITINERARY OR AGENDA

TIME:	ACTIVITY:
9:15 – 9:30 AM	Student Chapter Executive Board meets & welcomes Sissy Nikolaou to campus
9:30 AM – 10:30 AM	Meetings with geotechnical and structural faculty
10:30 AM – 11:00 AM	Informal meeting with the graduate students in the structural department
11:00 AM – 11:30 AM	Informal meeting with the graduate students in the geotechnical department
11:30 AM – 12:15 PM	Informal meeting with the undergraduates involved in the EERI design competition
12:15 PM – 1:15 PM	Lunch with Faculty
1:15 PM – 2:15 PM	Meeting with Dr. DeGroot and tour of geotechnical lab
2:15 PM – 2:30 PM	Set up for presentation
2:30 PM – 3:45 PM	Guest Lecture by Sissy Nikolaou
Evening (TBD)	Dinner with student chapter leadership at local restaurant

### STUDENT CHAPTER VISIT PLANNING COMMITTEE

#### LEAD ORGANIZER(S):

- Michael Morano, President, [mgmorano@umass.edu](mailto:mgmorano@umass.edu)
- Fiona O'Donnell, Vice President, [fodonnell@umass.edu](mailto:fodonnell@umass.edu)
- Rachel Wang, Treasurer, [rlwang@umass.edu](mailto:rlwang@umass.edu)
- Dr. Scott Civjan, Faculty Advisor, [civjan@ecs.umass.edu](mailto:civjan@ecs.umass.edu)
- Dr. Sergio Brena, Structural Engineering Faculty, [brena@ecs.edu](mailto:brena@ecs.edu)

### VISITING PROFESSIONAL LECTURE OVERVIEW

Sissy Nikolaou gave a talk titled The Big Picture and Missing Link of Earthquake Resilience. She described how the current understanding of resiliency emphasizes withstanding and recovering from disastrous events and does not consider the significant human factor that has a role in resiliency. The presentation was attended by approximately fifty students and faculty in the Structural Engineering and Mechanics and Geotechnical Engineering departments. Pablo Lopez, Engineer on Record for the World Trade Center, accompanied the visit and provided interesting insight on his experiences in the industry.

## Lecture Abstract

Our built environment is exposed to extreme natural events, with direct quality of life impacts to the affected communities. In recent years, earthquake engineers and agency officials are discussing resilience as the ability to anticipate and prepare for changing conditions, and withstand and rapidly recover from disastrous events. Big-picture challenges in the path to earthquake resilience will be discussed, including: (i) incorporating novel technologies for risk evaluation in a multi-disciplinary framework; (ii) using this framework to improve asset utilization; (iii) integration of life-long monitoring to re-assess risk with real-time data. Emphasis will be given on the factor of human and life quality as integral component and "missing link" in this emerging engineering frontier.

## Professional Bio

Dr. Sissy Nikolaou is Assistant Vice President and Principal of WSP with 20+ years of global engineering experience. She oversees the WSP's geotechnical earthquake engineering practice and leads the multi-hazard resilience initiative of the firm's Geotechnical & Tunneling Technical Excellence Center. Her consulting approach emphasizes performance-and resilience-based design, soil-structure interaction, and geo-risk assessment and mitigation. Her experience involves numerous critical infrastructure projects, high-rise structures in New York and Mexico cities. Driven by a desire to find innovative solutions that protect populations and help them emerge stronger from natural disasters, Sissy has been part of reconnaissance and studies after major earthquakes. A dedicated EERI member, Dr. Nikolaou serves on the Board of Directors. Her recognitions include the Prakash Prize for Excellence in Geotechnical Earthquake Engineering, the 2017 ACECNY Principal of the Year, and leadership Board positions in the Applied Technology Council (ATC) and the Geo-Institute of ASCE.

## SUPPLEMENTAL ACTIVITIES

### Informal Meeting with Graduate Students

Graduate students in the structural and geotechnical engineering departments met with Sissy Nikolaou in an informal setting to discuss her experiences as a graduate student researcher at the State University of New York at Buffalo and as a professional in the geotechnical and earthquake engineering industry. Pablo Lopez also shared his experiences working in large scale and highly anticipated projects in New York City. This event was attended by approximately thirty graduate students.

### Geotechnical Lab Tour

Dr. Don DeGroot provided a tour of the University of Massachusetts Amherst geotechnical labs to Sissy. He was able to show her the new testing and experimental equipment available, and discuss the research that is currently being performed at UMass Amherst.

## RESULTS, FEEDBACK AND LESSONS LEARNED

The Friedman Family Visiting Professional visit was very successful. The students and faculty at UMass Amherst found the talk given by Sissy Nikolaou to be very interesting, describing a human consideration that is often overlooked in a technical academic curriculum. The informal meeting with students provided an opportunity for networking as well as insight into available opportunities for industry jobs after graduation.

In the future, it is recommended to allocate more time for each activity, in particular the informal meeting with students and the lunch break. The most significant challenges experienced in organizing this visit was communication and scheduling. To mitigate these challenges in future visits, scheduling and meetings should be confirmed as early as possible.

## ACKNOWLEDGEMENTS

The University of Massachusetts Amherst EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Sissy Nikolaou through their Friedman Family Visiting Professional Program endowment.

## LIST OF ATTACHMENTS

Included at the end of this report is a flier for the EERI Friedman Family Visiting Professionals Lecture.



## THE BIG PICTURE AND MISSING LINK OF EARTHQUAKE RESILIENCE

Sponsored by the EERI Friedman Family Visiting Professionals Program

Dr. Sissy Nikolaou, P.E., D.GE, F.ASCE | WSP

**Abstract:** Our built environment is exposed to extreme natural events, with direct quality of life impacts to the affected communities. In recent years, earthquake engineers and agency officials are discussing resilience as the ability to anticipate and prepare for changing conditions, and withstand and rapidly recover from disastrous events. Big-picture challenges in the path to earthquake resilience will be discussed, including: (i) incorporating novel technologies for risk evaluation in a multi-disciplinary framework; (ii) using this framework to improve asset utilization; (iii) integration of life-long monitoring to re-assess risk with real-time data. Emphasis will be given on the factor of human and life quality as integral component and “missing link” in this emerging engineering frontier.

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*FRIDAY April 20, 2:30PM IN THE GUNNESS STUDENT CENTER*