FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to University at Buffalo: April 28, 2017

This report summarizes the visit of **Dr. Sissy Nikolaou** from WSP-Parsons-Brinckerhoff that took place at the University at Buffalo on April 28, 2017.

ITINERARY

Time:	**Activity:**
Thursday, April 27, 2017	
7:00 PM	Dinner with CSEE faculty
Friday, April 28, 2017	
9:00 AM - 9:30 AM	Arrival on Campus, Breakfast
9:30 AM - 10:45 AM	Tour of Structural Engineering and Earthquake Simulation Laboratory
11:00 AM - 12:15 PM	Keynote Presentation
12:30 PM - 2:00 PM	Lunch with Students/Faculty
2:00 PM - 2:45 PM	Meeting with UB-EERI officers and Undergrad Seismic Team
3:00 PM - 4:30 PM	Speed Interviews

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZERS:

- President — Joseph Colletti (jacollet@buffalo.edu)
- Treasurer — Mark Hare (mhare@buffalo.edu)
- Senator — Rimjhim Kashyap (rimjhimk@buffalo.edu)
- Senator — Robin Kumar (rkumar24@buffalo.edu)
- Senator — Shubham Anand (shubhama@buffalo.edu)
- Senator — Aishwarya Bansode (abansode@buffalo.edu)
- Member — Siddharth Parida (sparida@buffalo.edu)
- Lab-Tour Participant — Xuan Gao (xuangao@buffalo.edu)
- Lab-Tour Participant — Ki Pung Ryu (kiryu@buffalo.ed)
- Faculty Adviser — Andreas Stavridis (astavrid@buffalo.edu)

VISITING PROFESSIONAL LECTURE OVERVIEW

Student attendance was overwhelming and the room we used was at capacity. Dr. Sissy Nikolaou discussed the importance of earthquake engineering. The presentation appealed to many students and faculty from other schools at UB, including mechanical engineering and geography. Dr. Nikolaou participated in a question and answer session where individuals were able to ask her specific questions regarding her experience in earthquake engineering and reconnaissance and professional work. An important point from Dr. Nikolaou's presentation is that to help mitigate earthquake effects, all disciplines must work together. Earthquake engineering is not composed solely of civil engineers, but of a consortium of professionals from different disciplines and people who learn how to work together to reduce earthquake-economic damage and loss of life. After the lecture, students and faculty had lunch with Dr. Nikolaou. ~65 people attended the presentation.

Lecture Abstract

Extreme multi-hazards of earthquakes, tsunamis, hurricanes, landslides, floods, or terrorist attacks have generated unfortunate, yet valuable lessons that reveal risks to our built environment and population. These lessons often lead to modification of design codes and offer invaluable case histories that can advance empirical methodologies. Reconnaissance immediately after a disaster, observation and documentation of failures but also successes, and long-term monitoring of the recovery and rebuild are inherently necessary components for engineers to advance the state of practice and benefit the society by creating safer designs.

Reconnaissance methods have evolved dramatically due to advancements in instrumentation and visualization technologies that have become an essential tool that was absent in the early years of observing natural disasters. This presentation will highlight the importance of post-hazard observations with selected historical examples and focus on technologies for multi hazards geotechnical reconnaissance through example case studies. The speaker will share her reconnaissance experience after Hurricane Sandy, 9-11, and several earthquakes including the recent April 2016 Ecuador earthquake focusing on the role of observations in: (i) understanding effects of extreme events; (ii) studying the behavior of designs to identify flaws for improvement, or successes for replication in the future and advancement of design codes; (iii) collecting data to enhance knowledge and prepare for the next event; (iv) disseminating data to response and rescue teams; (v) organizing and using data as case histories that can assist in developing empirical methodologies.

Professional Bio

Sissy Nikolaou is a practicing earthquake engineer with more than 20 years of experience. She is a Principal with WSP, where she leads the firm's multi-hazard resilience engineering practice. Her education includes a Diploma from the NTUA, Greece and MSc and PhD degrees from UB, where she is now on the Advisory Board of the Dean of Engineering. Her technical capabilities span from structural to geotechnical engineering with emphasis on performance-based design, seismic hazard, liquefaction evaluation and mitigation and risk/resiliency assessment of critical facilities under extreme events. In New York, her focus is to bring earthquake awareness and establish the practice standard addressing local geology and tectonics. Around the globe, she develops unique, creative solutions in challenging infrastructure, bridge, and private development projects that require cross-cultural interaction of multidisciplinary teams.

Sissy has had many leadership roles in organizations like the Earthquake Engineering Research Institute (EERI) and the Applied Technology Council (ATC), where she currently serves as member of the Board of Directors, and has chaired the seismic committee of the 2014 NYC Building Code. For her contributions, Dr. Nikolaou has been recognized with the Prakash Prize for Excellence in Earthquake Engineering, the Fellow title of the American Society of Civil Engineers, and was invited by President Obama to participate in the 2016 White House Earthquake Resilience Summit.

SUPPLEMENTAL ACTIVITES

Arrivals and Breakfast

Friday morning we invited Dr. Nikolaou to UB at approximately 9 a.m. for a continental breakfast. After the meal, we headed into the Structural Engineering and Earthquake Simulation Laboratory (SEESL) for tours.

Tour of Structural Engineering and Earthquake Simulation Laboratory (SEESL)

This was the first time Dr. Nikolaou had visited SEESL in a while, and she seemed interested in the technical activities underway. Four students, who were working on experimental projects in the SEESL, discussed their projects with Dr. Nikolaou.. The students who discussed their projects with Dr. Nikolaou were Xuan Gao, Ki Pung Ryu, ABM Tahidul Haque and Ketan Ragalwar. (Photo of tour at end of Report)

Keynote Presentation

See comments in previous section. (Photo of presentation at end of Report)

Lunch

The UB-EERI student chapter used some of our graduate student association funds to accommodate approximately 25 people for lunch after the keynote presentation. We invited a number of attendees, including some faculty Dr. Nikolaou knows well, EERI officers and undergraduate students interested in Earthquake Engineering. Lunch was purchased from a local café and included a selection of sandwiches, salad and potato chips

EERI Meeting

After lunch, mostly EERI officers and Dr. Stavridis, the chapter advisor, met with Dr. Nikolaou in a round-table discussion to explain how things are going at UB in the EERI realm and what we would like to see change. We discussed our current year's activities. Dr. Nikolaou was pleased to see we have made some trips off campus to visit New York City and McMaster University, and she appreciated our choice for the next seminar guest, , Dr. Gregory Deierlein, on May 5th (seven days after Dr. Nikolaou's visit). Also, we would like to further see student chapters grouped into regions so there can mini-academic EERI events. In fact, at UB, we want to organize a yearly symposium by inviting local schools that includes a paper competition. Dr. Nikolaou found this to be a great idea. (Photo of meeting at end of Report)

Speed Interviews

Dr. Nikolaou sat with undergraduate and graduate students to discuss the state of professional engineering, review resumes, and conduct speed interviews. There was excessive interest (on a first come first served basis), and students learned what it would take to be hired at a large engineering firm. Approximately 30 students participated in the interview event

RESULTS, FEEDBACK AND LESSONS LEARNED

Overall this was a great experience. It was fun to have Sissy visit UB and spend time with our chapter. As a UB alumna, Sissy had a most impactful visit because of her close ties to UB. She was able to give a lot of good suggestions on how to strengthen our EERI chapter and make the best of the earthquake engineering program at UB.

There was a lot of planning that went in to this visit. The event required several hours over several days to make sure it logistically worked. It is always good for students to get together and plan these events. It helps team-work skill development.

ACKNOWLEDGEMENTS

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

Many thanks to all of the UB students, faculty and staff that helped prepare and host.

This page, flyer hung up around UB Campus

University at Buffalo
Department of Civil, Structural and Environmental Engineering
School of Engineering and Applied Sciences

ENGINEERING SEMINAR

EERI Friedman Family Visiting Professional Lecture

Rapid Reconnaissance Technologies for Multi Hazards

Sissy Nikolaou, PE, F.ASCE

Principal, Multi-Hazards & Geotechnical Engineering, WSP Geotechnical & Tunneling
WSP Technical Fellow of Earthquake Engineering

Abstract

Extreme multi-hazards of earthquakes, tsunamis, hurricanes, landslides, floods, or terrorist attacks have generated unfortunate, yet valuable lessons that reveal risks to our built environment and population. These lessons often lead to modification of design codes and offer invaluable case histories that can advance empirical methodologies. Reconnaissance immediately after a disaster, observation and documentation of failures but also successes, and long term monitoring of the recovery and rebuild are inherently necessary components for engineers to advance the state of practice and benefit the society by creating safer designs.

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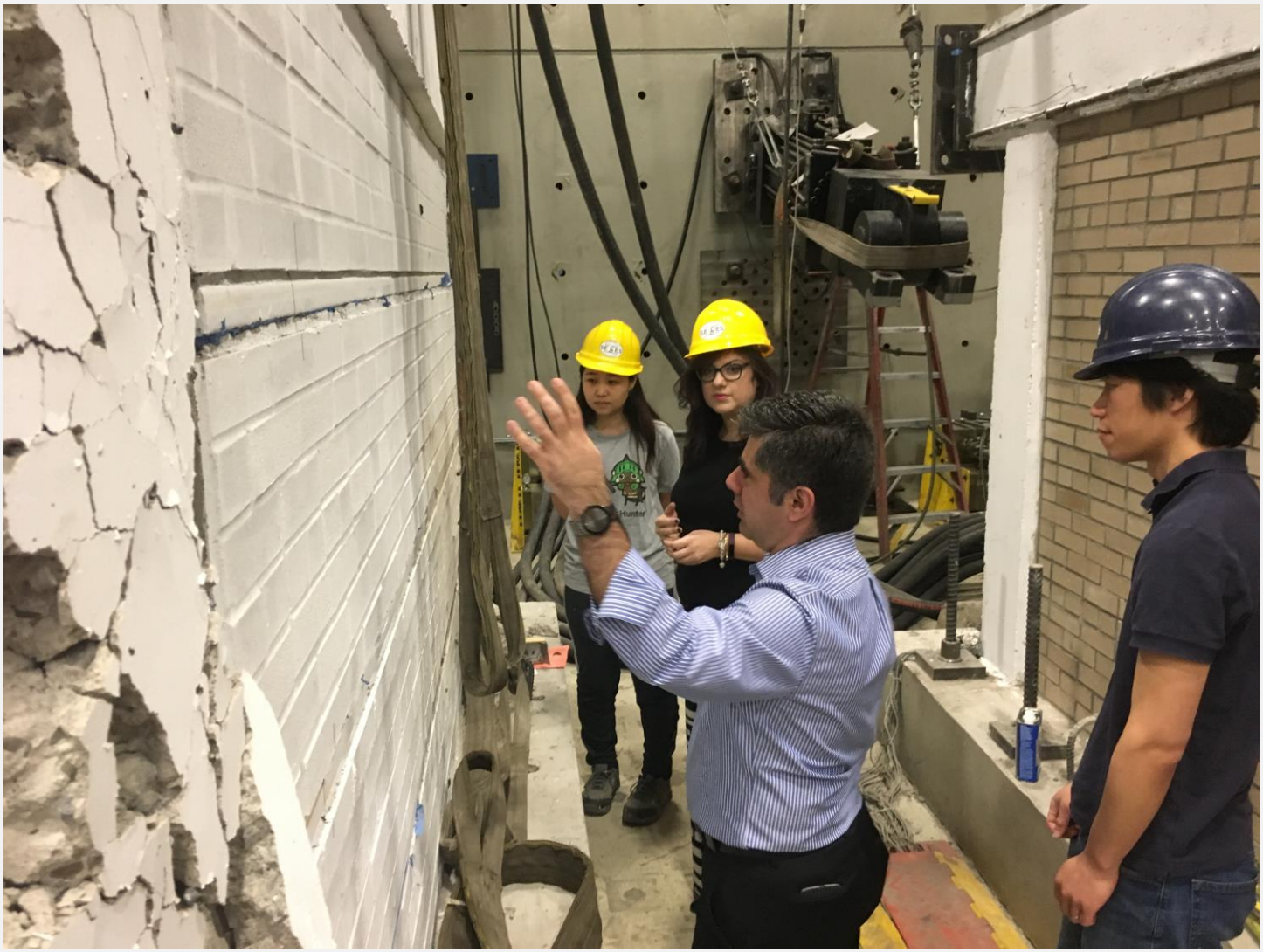
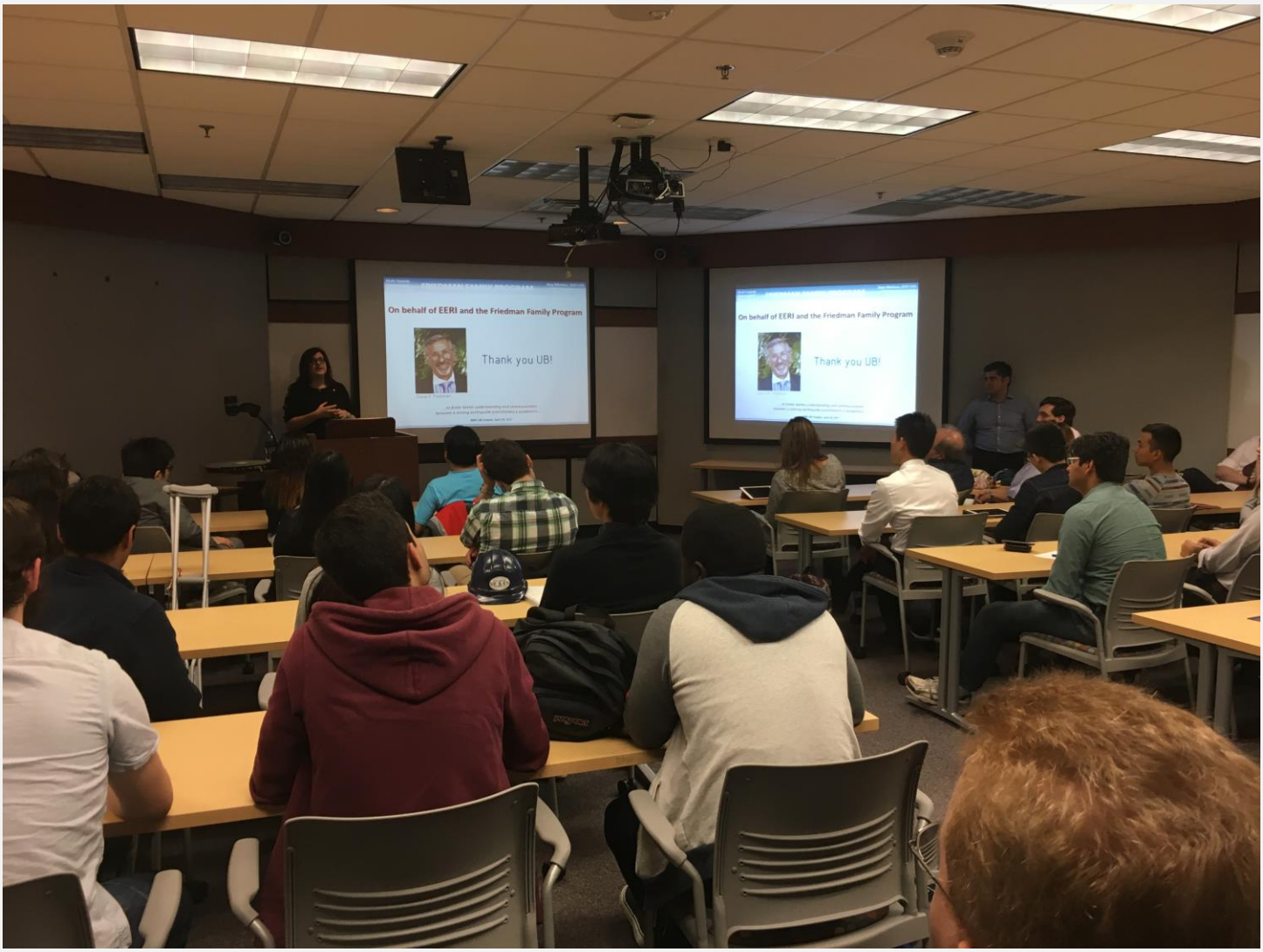
Date: Friday, April 28th, 2017 Time: 11.00 am

This page, photo of Sissy getting tour of SEESL



This page, photo of Sissy giving keynote presentation



This page, photo of Sissy and UB-EERI during sit-down meeting