FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to Virginia Tech: April 8th, 2019

This report summarizes the visit of **Dr. Ramin Golesorkhi** from LANGAN that took place at Virginia Tech on April 8th, 2019.

ITINERARY OR AGENDA

TIME:	ACTIVITY:
9:30 AM	Pick-up from The Inn at Virginia Tech
10:00 AM – 11:00 AM	Tour of the Structures and Geotech Laboratory facilities
11:00 AM – 11:30 AM	MS and PhD Students Present their Research
12:00 PM – 1:30 PM	Lunch with EERI Student Chapter Officers
1:30 PM – 4:00 PM	One-on-one meetings with Faculty Members
4:30 PM – 5:30 PM	Presentation by Dr. Golesorkhi
5:30 PM – 6:00 PM	Reception for students to ask questions and socialize with visitor
6:30 PM –8:00 PM	Dinner with Faculty

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S): Raul Avellaneda, President, rear93@vt.edu.

- Kristin Ulmer, Geotech Chair, kjulmer7@vt.edu
- Edward Gil, Outreach Chair, edwardmg@vt.edu
- Bishal Khadka, Vice-President, bkhadka@vt.edu
- Adrian Rodriguez-Marek, Faculty Advisor, adrianrm@vt.edu

VISITING PROFESSIONAL LECTURE OVERVIEW

Dr. Golesorkhi gave a great presentation on selection and use of ground motions for performance-based engineering. The attendance was satisfactory with around 30 people in attendance.

Lecture Abstract

Performance-Based Seismic Design (PBSD) is the approach that is in new seismic standards. PBSD is a methodology that allows for design flexibility and provides opportunities to enhance structural performance and innovation. With PBSD the designer has the ability to demonstrate higher performance levels for different levels of earthquake shaking. Nonlinear time series evaluation and analysis is an integral part of PBSD. Therefore, the selection of the suite of ground motions and the site-specific development of them are critically important. The talk will present the selection process, the development of spectrally compatible time series and some of the details that are important in the development. The talk will discuss spectral matching, scaling, and hybrid approach (mean spectral matching) and also touch on the development of fling step time series for use in the near-field.

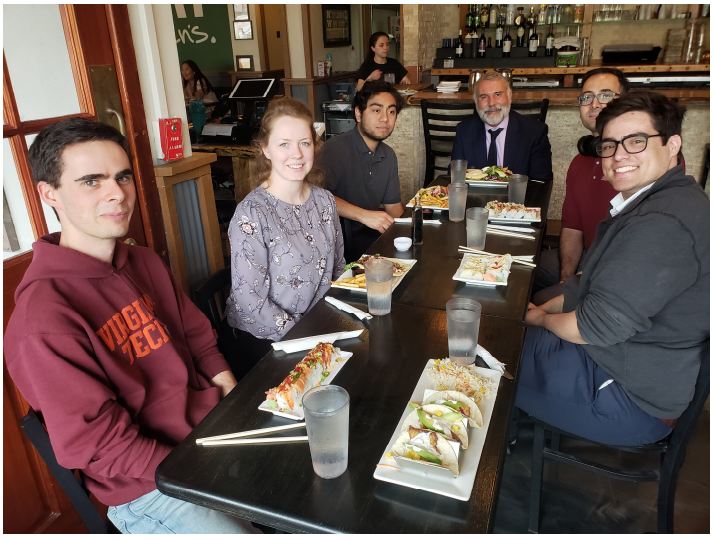
Professional Bio

Dr. Golesorkhi is a registered civil (California and New York) and geotechnical engineer (California) and a Fellow of ASCE. He is a principal/vice president and director of earthquake engineering services at Langan, an over 1,050-person geotechnical, environmental, and civil design engineering firm, with more than 30 years of experience in seismic analysis and foundation engineering. He received his Bachelor of Science and Master of Science degrees from Tufts University and his PhD from the University of California, Berkeley. Dr. Golesorkhi directs the development of seismic and geotechnical design criteria appropriate for industrial, residential, private and government office buildings, hospitals and healthcare facilities, bridges, elevated freeways and viaducts, base isolated structures, tunnels, and seismic strengthening of existing structures. He has developed seismic design criteria for performance-based design of structures since early 2,000's and has been active in the development of seismic design criteria in building codes. He is one of the primary authors of Council of Tall Buildings and Urban Habitat (CTBUH) Technical Guide on Performance-Based Seismic Design for Tall Buildings (2017). Some of his projects include: the new Asian Art Museum, numerous high-rise towers, a major refinery in Peru, AT&T Park, Levi's Stadium, and the State office building in San Francisco. His experience stretches throughout the United States, Central and South America, Southeast Asia, India and the Middle East.

SUPPLEMENTAL ACTIVITES

Lunch with Dr. Golesorkhi

The officers of the EERI Student Chapter at Virginia Tech took Dr. Golesorkhi to lunch at a local restaurant. The students took this opportunity to ask Dr. Golesorkhi about his experience as a practicing engineer, his experience living in California, as well as career advice.



Tour of the Structures and Geotech Laboratory facilities

Dr. Golesorkhi was taken on a tour of two of the research laboratories at Virginia Tech. The first one was the Thomas M. Murray Structures Lab. The second was the W. C. English Geotechnical Research Laboratory. The tour was conducted by Raul Avellaneda, EERI chapter president. During the tour, Mr. Avellaneda briefly explained the ongoing research at the lab.

MS and PhD Students Present their Research

The MS and PhD students in the Geotech program prepared a presentation of their research in a small poster session. The students used this occasion as an opportunity to ask him questions regarding his practicing experience and possible career paths.

RESULTS, FEEDBACK AND LESSONS LEARNED

Overall, the visit was a success. Some of the activities were shorter than anticipated to the schedule moved along rather quickly. In the future, the chapter will plan more activities to fill the visitor's time. The program and the visit was a fantastic opportunity for the students to be exposed to a practicing engineer with real life experience. For the students interested in earthquake engineering, the presentation was a great demonstration of the challenges that can arise in practice. In the future, the chapter would like for more topics related to performance-based engineering and project-specific challenges.

ACKNOWLEDGEMENTS

The Virginia Tech EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of {name of professional} through their Friedman Family Visiting Professional Program endowment.

LIST OF ATTACHMENTS

- See Attached for a copy of the flyer used for advertisement.

Development of Site-Specific Time Series for Performance-Based Design Art or Science?

Ramin Golesorkhi, Principal/Vice President and Director,
Langan
San Francisco, CA

Date: April 8th, 2019 from 4:30-5:30 PM
Location: 320 Lavery Hall

Abstract:

Performance-Based Seismic Design (PBSD) is the approach that is in new seismic standards. PBSD is a methodology that allows for design flexibility and provides opportunities to enhance structural performance and innovation. With PBSD the designer has the ability to demonstrate higher performance levels for different levels of earthquake shaking. Nonlinear time series evaluation and analysis is an integral part of PBSD. Therefore, the selection of the suite of ground motions and the site-specific development of them are critically important. The talk will present the selection process, the development of spectrally compatible time series and some of the details that are important in the development. The talk will discuss spectral matching, scaling, and hybrid approach (mean spectral matching) and also touch on the development of fling step time series for use in the near-field.

About the Speaker:

Dr. Golesorkhi is a registered civil (California and New York) and geotechnical engineer (California) and a Fellow of ASCE. He is a principal/vice president and director of earthquake engineering services at Langan, an over 1,050-person geotechnical, environmental, and civil design engineering firm, with more than 30 years of experience in seismic analysis and foundation engineering. He received his Bachelor of Science and Master of Science degrees from Tufts University and his PhD from the University of California, Berkeley. Dr. Golesorkhi directs the development of seismic and geotechnical design criteria appropriate for industrial, residential, private and government office buildings, hospitals and healthcare facilities, bridges, elevated freeways and viaducts, base isolated structures, tunnels, and seismic strengthening of existing structures. He has developed seismic design criteria for performance-based design of structures since early 2,000's and has been active in the development of seismic design criteria in building codes. He is one of the primary authors of Council of Tall Buildings and Urban Habitat (CTBUH) Technical Guide on Performance-Based Seismic Design for Tall Buildings (2017). Some of his projects include: the new Asian Art Museum, numerous high-rise towers, a major refinery in Peru, AT&T Park, Levi's Stadium, and the State office building in San Francisco. His experience stretches throughout the United States, Central and South America, Southeast Asia, India and the Middle East.