

FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM



Stanford University Student Chapter of the Earthquake Engineering Research Institute

Visit Date: March 5, 2019

This report summarizes the visit of Nathan Gould from ABS Consulting to Stanford University on March 5, 2019.

ITINERARY

The itinerary of the visit was as follows:

11:00 – 12:00 pm	Pick up at airport, leave luggage at Stanford Guesthouse.
12:00 - 13:15 pm	Lunch with EERI leadership and Faculty Members.
1:30 - 3:00 pm	Round table with graduate students at Blume Center Conference Room. Master's and PhD's students will introduce themselves and talk briefly about their research projects. In addition, they will have questions about his area of expertise, contributions to the field and professional experience.
3:00 – 4:30 pm	Tour around the facilities and laboratories of the Blume Earthquake Engineering Center and "1906 San Francisco Earthquake" Walking tour around Stanford Campus.
4:30 – 5:50 pm	EERI Technical Seminar: "Enhanced Design Integrated into A Multi-Hazard Design Approach"
6:30 – 7:30 pm	Casual dinner with graduate students performing research in topics related to the speaker's expertise

STUDENT CHAPTER VISIT PLANNING COMMITTEE

The first interaction with the speaker was that the student chapter picked him up at the airport, having the chance to talk about the experience of the speaker regarding his professional work, and his relationship with EERI. In addition, members of the board had a chance to talk about their research interests and work, besides the work that EERI does.

Another meeting with the board was held as a tour around the Stanford Campus, in which the board talked about the impact of the 1906 and 1989 earthquakes on different structures around campus.

Lecture Abstract

Multi-Hazard design, which incorporates both natural and manmade hazards, has become a popular design requirement for critical structures. While many Owners and various project team members anticipate a relatively easy integration of the respective hazards based on their understanding of the loads generated by the hazards, numerous complexities arise during the actual integration of a multi-hazard design approach into construction documents.

A case study of recently designed emergency communications facility will be reviewed to understand the development of the design criteria and integration of the different conventional and extreme load criteria into a cohesive multi-hazard strategy to provide a higher level of protection for both structural and non-structural elements that are deemed to be critical to the post-event operations of the facility. Specific design features such as enhanced vertical and lateral load paths, and attachments of critical non-structural elements will be examined to illustrate the implementation of a multi-hazard strategy in the actual structure.

Professional Bio

Dr. Nathan Gould, Chief of Technology for the ABS Consulting Advanced Engineering Division, also serves as the General Manager of the St. Louis office of ABS Consulting. He is a practicing structural engineer with over 28 years of experience in the design, construction and rehabilitation of major structures in all regions of the United States. Dr. Gould is active in the utilization of performance based seismic design criteria and methodology for the design of new buildings and the retrofit of existing structures.

Dr. Gould is the author of numerous technical papers including recent articles on Performance Based Seismic Design, Progressive Collapse of Structures, Managing Extreme Wind Losses, and Terrorism Risk. He currently serves on several technical committees and organizations related to seismic analysis and design, including the NEHRP Advisory Committee on Earthquake Hazards reduction. He has been a member of several post earthquake reconnaissance groups, including teams that investigated damage following the 2010 Haitian and 2011 Christchurch events. Dr. Gould is a licensed Professional and Structural Engineer in several states.

SUPPLEMENTAL ACTIVITIES

As the itinerary shows, Nathan's visit offered numerous opportunities for Stanford students and Faculty to interact with him in a casual environment. The following is a summary of each activity:

Lunch: At the Stanford Faculty Club, Nathan had lunch with Prof. Sarah Billington, Prof. Jack Baker, and the current EERI Board (Andres Acosta, Rodrigo Silva, and Francisco Galvis).

Round table discussion: In this opportunity, Structural Engineering students from the MS and PhD program as well as a couple postdocs from the John A. Blume Earthquake Center shared an hour and half discussion with Nathan about a variety of topics. The conversation started with the challenges of the profession where a more interdisciplinary and multi-hazard approach is needed. Then, Nathan shared his view about the job market on structural engineering for MS and PhD graduates in light of the challenges we previously discussed.

Tour: After the discussion, the EERI Stanford Student Chapter took Nathan around the main part of campus. We walked around the Main Quad and went up to the top of the Hoover Tower, the tallest structure in Palo Alto. From there we could see most of the University.

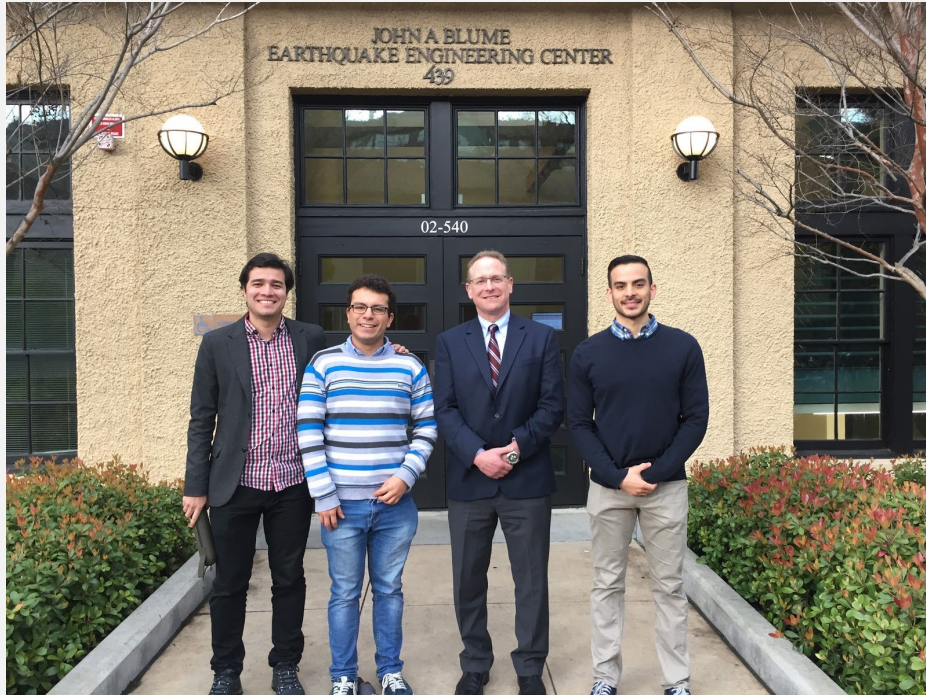
Final dinner: After Nathan's lecture, current and past members of the EERI-Stanford chapter board took Nathan to a casual dinner to thank him for taking the time to come to Stanford and share his life experience with us.

ACKNOWLEDGEMENTS

The Stanford University EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Nathan Gould through their Friedman Family Visiting Professional Program endowment.

It was a great opportunity to get to know about how research gets applied to the industry and about his professional experience, especially in a world where it is becoming more common that structures have to endure the simultaneous effect, in their lifetime, of different natural or manmade hazards.

PHOTOGRAPHS



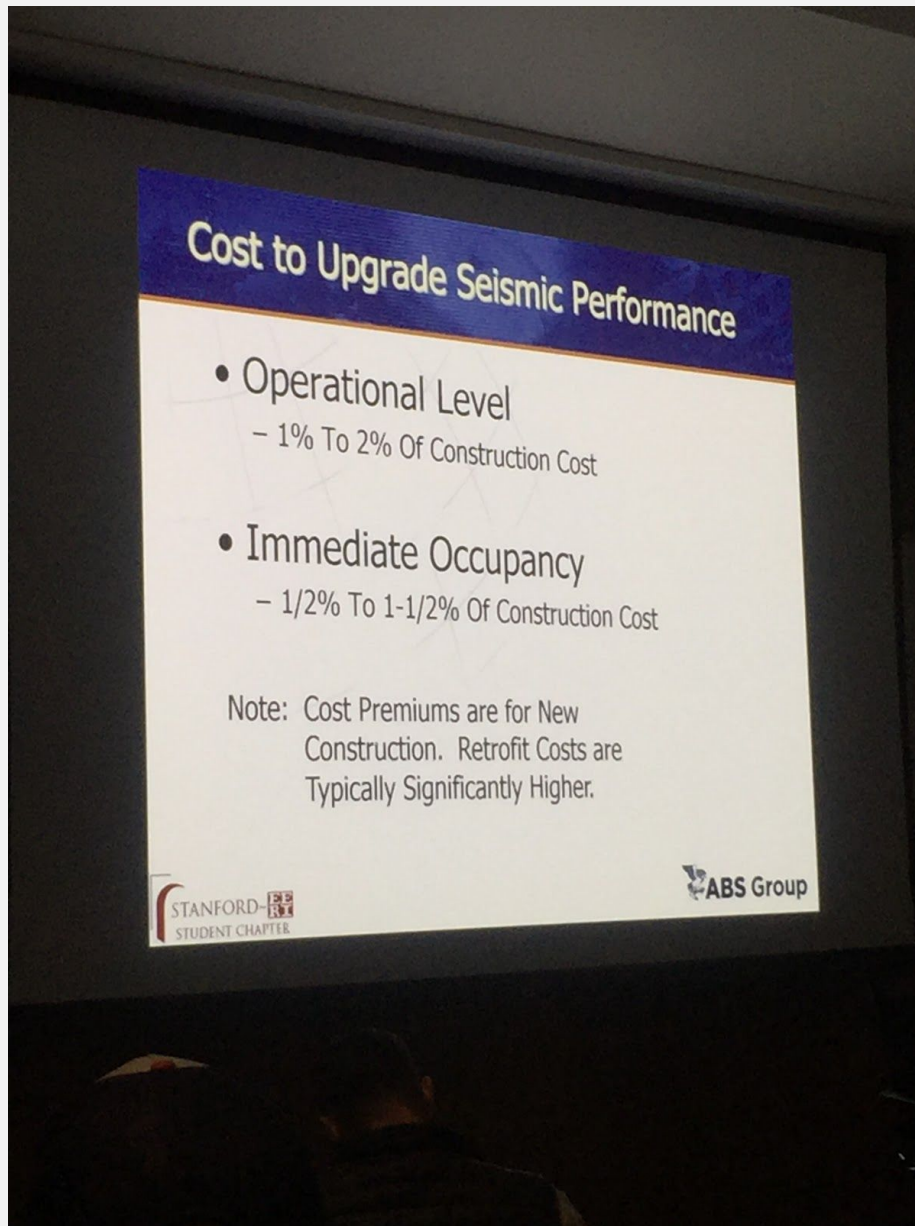
Nathan Gould with EERI Stanford Student chapter board members

From left to right: Francisco Galvis (Financial Officer EERI Stanford Student Chapter), Rodrigo Silva (Vice-president EERI Stanford Student Chapter), Nathan Gould (Friedman Family Visiting Professional), Andres Acosta (President EERI Stanford Student Chapter)



Dinner at Vino Enoteca.

From left to right: Pablo Heresis (PhD Candidate in structural engineering), Nathan Gould (Friedman Family Visiting Professional), Rodrigo Silva (Vice-president EERI Stanford Student Chapter), Andres Acosta (President EERI Stanford Student Chapter), Francisco Galvis (Financial Officer EERI Stanford Student Chapter), Luis Ceferino (PhD Candidate in structural engineering)



Slide from Nahan's presentation. One of the most interesting points in his talk was his experience in making his clients understand that current design standards aim for performance levels that they may not be willing to accept; thus, they should consider better performance.