

FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM



Visit to University of California, Irvine: May 20, 2022

This report summarizes the visit of **Troy Morgan** from Exponent, Inc., that took place at the University of California, Irvine on May 20, 2022.

ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

TIME:	ACTIVITY:
12:00 PM – 12:30 PM	Student Chapter President meets & welcomes Visiting Professional to campus
12:30 PM – 1:00 PM	Meeting with the student chapter leadership from this year and tour of the Civil and Environmental Engineering department
1:00 PM – 1:30 PM	Arrive at lecture hall and allow time for lecture preparations
1:30 PM – 3:00 PM	Guest lecture by Visiting Professional
3:00 PM – 4:30 PM	Lunch

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

- Sarah Balaian, Student Chapter President, sbalaian@uci.edu
- Niloufar Behboud, Graduate Student Team Advisor, nbehboud@uci.edu
- Saurabh Singhal, Graduate Student Team Advisor, singhal1@uci.edu
- Michelle Sabers, SDC Team Captain, msabers@uci.edu

Farzin Zareian, Jasper Vrugt

VISITING PROFESSIONAL LECTURE OVERVIEW

The Visiting Professional, Troy Morgan, presented an engaging and exciting lecture on the work he has done in Seismic Risk Mitigation. Throughout his lecture, he presented a collection of projects that he has been a part of throughout his career, including his work on nuclear plant reliability analysis. We had great attendance from undergrad and graduate students, with everyone enjoying his presentation.

Lecture Abstract

The modern era of civilization is marked by immense networks of complicated, interdependent systems and rapidly evolving technologies, including the world of civil infrastructure. Many of these technologies, while born from academia, are implemented and refined in the world of industry. As today's complex ideas are put into practice, there is an increasing tendency for things to fail under extreme loading such as earthquakes, and an

urgent desire to prevent such failures. This talk explores the field of seismic risk mitigation in practice, drawing on projects from structural engineering, including nuclear plant reliability analysis, urban post-earthquake reconnaissance, and insurance investigations related to alleged earthquake damage. Extensions of infrastructure risk assessment and mitigation frameworks outside earthquake engineering are presented and discussed.

Professional Bio

Dr. Troy Morgan is Principal Engineer and Director of Exponent's Buildings & Structures practice. He is a recognized expert in the field of seismic isolation and passive energy dissipation systems, and specializes in performance of structures under extreme loading such as earthquakes, wind, flood, and explosions. Dr. Morgan has performed extensive research on the numerical simulation and experimental behavior of innovative seismic protective devices and optimization of their use within performance-based engineering frameworks. Prior to joining Exponent, he was Assistant Professor at the Center for Urban Earthquake Engineering at the Tokyo Institute of Technology in Japan. Dr. Morgan has taught courses at New York University and University of California, Berkeley. He has also held positions as a post-doctoral researcher at the Pacific Earthquake Engineering Research Center and as a design engineer at Forell/Elsesser Engineers Inc. Dr. Morgan received his B.S., M.Eng., and Ph.D. degrees from the University of California, Berkeley.

SUPPLEMENTAL ACTIVITIES

Meeting with the Student Chapter and Touring the Department

When Troy Morgan arrived at the campus, a few of our chapter members met with him to welcome him and discuss topics such as career goals and the upcoming EERI Annual Meeting and Seismic Design Competition. It was a great chance to spend time with Troy Morgan and get some insight into prospective careers after graduation and future involvement in EERI. We also had a quick tour of the department before making our way to the lecture hall.

RESULTS, FEEDBACK AND LESSONS LEARNED

One of the main challenges that we faced with this visit was that due to COVID and the timing of the visit, most of the professors in our department were not on campus this day. We were hoping for Troy to have some more time to speak with professors and hear about research that is being done at the school.

The feedback from the students was very positive; we had great attendance and the audience was very engaged. The Student Chapter at UCI greatly enjoys participating in this program and having the opportunity to host professionals in different fields of earthquake engineering.

ACKNOWLEDGEMENTS

The University of California, Irvine EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Troy Morgan through their Friedman Family Visiting Professional Program endowment.