

# FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

## Visit to Cornell University: May 1<sup>st</sup>, 2018

Student Chapter  
University Logo



This report summarizes the visit of **Ivan Wong** from Lettis Consults International that took place at Cornell University on May 1<sup>st</sup>, 2018,

### ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

TIME:	ACTIVITY:
8:30 AM – 9:15 AM	Student Chapter President and VP meets & welcomes Ivan to Cornell and enjoys breakfast at local coffee shop.
9:20 AM – 9:40 AM	Meeting with earth and atmospheric sciences (EAS) graduate student Dana Peterson
9:40 AM – 10:10 AM	Meet with EAS faculty Dr. Matt Pritchard
10:10 AM – 10:40 AM	Meet with EAS faculty Dr. Larry Brown
10:45 PM – 12:00 PM	Briefing of the Cornell pipeline project by Blake Berger and demo of Cornell full-scale earthquake apparatus by Dr. Greg McLaskey and Bill Wu
12:00 PM – 1:30 PM	Lunch with undergrad seismic design team members and interested graduate civil and environmental (CEE) students
1:00 PM – 2:00 PM	Meet with CEE faculty Dr. Mircea Grigoriu
2:00 PM – 2:45 PM	Meet with CEE faculty Dr. Tom O'Rourke
4:00 PM – 5:00 PM	Ivan gives lecture on earthquake hazards
5:00 PM – 6:30 PM	CEE graduate student associate and EERI co-host reception

### STUDENT CHAPTER VISIT PLANNING COMMITTEE

#### LEAD ORGANIZER(S):

- Bill Wu, President, sw842@cornell.edu
- Yolanda Lin, Vice President, ycl4@cornell.edu

### VISITING PROFESSIONAL LECTURE OVERVIEW

#### Lecture Abstract

Ivan talked about earthquake hazard in the eastern US from a probability approach. After hazard is estimated, risk can then be assessed and included in building codes, etc. Specifically, he pointed out flaws in creating hazards maps for the eastern US: high hazard regions are only determined by historical records and have not considered regional geological and fault systems. Ivan also explained the steps to create a hazard map.

#### Professional Bio

Ivan Wong is a Senior Principal Seismologist with Lettis Consultants International in Walnut Creek, California. He is an internationally recognized expert in seismic hazard evaluations with more than 40 years of experience in the fields of engineering seismology and seismic geology. A major focus in his career has been earthquake hazard reduction and awareness and public outreach. Ivan has directed the seismic hazard evaluations of more than 500 critical and important facilities worldwide including more than 250 dams, many for the Federal government.

He has managed some of the largest seismic hazard evaluations performed in the U.S. including the Yucca Mountain Project, the largest study ever performed. For FEMA, Ivan has been involved in the education and implementation of the seismic risk assessment software HAZUS in several areas in the U.S. He has been the recipient of numerous NEHRP external research grants from the U.S. Geological Survey that have supported the development of urban probabilistic and scenario hazard maps and other earthquake hazard-related studies.

## SUPPLEMENTAL ACTIVITIES

{Lunch}

At noon, Ivan met with students of the undergrad seismic design team and other CEE graduate students interested in a career in earthquake engineering. Thai food was served. Ivan talked about past projects he had worked on and opened it up to questions from Cornell students.



{Demo of the Cornell full-scale earthquake apparatus}

Dr. Greg McLaskey and graduate students Bill Wu gave Ivan a demo of a rock mechanics apparatus built at Cornell that is capable of creating up to M -1 earthquakes along a 3 m simulated fault. Ivan has visited a similar apparatus in the USGS Menlo Park office and met with Dr. McLaskey's post-doc advisors. We discussed how the earthquake mechanics demonstrated on the lab apparatus can be scaled to shed insight on the nucleation of natural earthquakes.

## RESULTS, FEEDBACK AND LESSONS LEARNED

We did not face many challenges while preparing for Ivan's visit. Coordinating meetings with EAS and CEE faculty took some effort but was manageable. Ivan enjoyed his meetings, and catching up his longtime friend Dr. Tom O'Rourke. A large turnout was present at his lecture, including faculty and students from both CEE and EAS.

## ACKNOWLEDGEMENTS

The Cornell University EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Ivan Wong through their Friedman Family Visiting Professional Program endowment. We would also like to thank the CEE GSA for sponsoring the reception.

## LIST OF ATTACHMENTS

Included at the end of this report are various attachments to supplement the information included above. A list of the attachments is included below:

- Item 1, flier for event
- Item 2, professional slide show or other handouts



**Introduction (cont.)**

- Since 1989, there have been a string of notable events where much has been learned including the:
  - 1989 M 6.9 Loma Prieta, California
  - 1994 M 6.7 Northridge, California
  - 1995 M 6.9 Kobe, Japan
  - 1999 M 7.6 Chi Chi, Taiwan
  - 1999 M 7.4 Kocaeli, Turkey
  - 2004 M 9.2 Great Sumatra-Andaman
  - 2008 M 7.9 Wenchuan, China
  - 2010 M 7.0 Haiti
  - 2011 M 6.3 Christchurch, New Zealand
  - 2011 M 9.0 Tohoku-Oki, Japan



Earthquake Engineering Research Institute  
Friedman Family Visiting Professionals Program



# Learning From Earthquakes: Implications to Seismic Hazard and Seismic Design in the Eastern U.S

**Ivan Wong**

Senior Principal Seismologist, Lettis Consultants International

May 1<sup>st</sup>, 2018 4:30 pm Hollister 366

Reception to follow

*Sponsored by EERI*