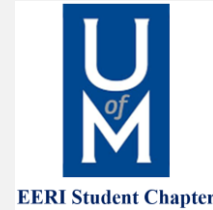


FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to University of Memphis: May 14, 2024.



This report summarizes the visit of **Mr. Ivan G. Wong** from Lettis Consultants that took place at the University of Memphis on May 14, 2024.

ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

TIME:	ACTIVITY:
8:00 AM – 9:30 AM	Breakfast with faculty advisor, President & leadership of the EERI student chapter at Brother Jupiter's Restaurant.
9:30 AM – 10:30 AM	Tour of campus with Visiting Professional, especially departments or labs related to EERI disciplines
10:30 AM – 11:30 AM	Pre-Lecture
11:30 AM – 12:00 PM	Lunch
12:00 PM – 1:30 PM	Lecture
1:30 PM – 2:30 PM	Informal meeting with department graduate students for career guidance and getting insight and feedback for their research projects.
2:30 PM – 3:00 PM	Meeting with Faculty member (Dr. Chris Cramer)
3:00 PM – 3:30 PM	Meeting with Faculty member (Dr. Thomas Goebel)

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

- Dr. Shahram Pezeshk, faculty advisor, speszshk@memphis.edu
- Mohsen Akhani, president, mkhnsnjn@memphis.edu.
- Najme Alidadi, vice president, nalidadi@memphis.edu.
- Mehran Davatgari Tafreshi, industry liaison, mdvtgrtf@memphis.edu.

VISITING PROFESSIONAL LECTURE OVERVIEW

Lecture Abstract

In the past few decades, our understanding of earthquake source processes, the distribution and seismogenic potential of active faults in the U.S., seismic wave propagation and site effects has improved significantly resulting in important advances in our understanding of earthquake hazards throughout the U.S. Despite important scientific accomplishments, however, significant challenges lie ahead. For example, the USGS National Seismic Hazard Maps provide a uniform basis for ranking regions in terms of earthquake hazards. These maps, however, can be misleading because of the non-uniform availability of paleoseismic information and the fact that the hazard in most of the central and eastern U.S. is based solely on the brief, and not necessarily representative, historical earthquake record.

In parts of the western U.S. such as California, the history of damaging earthquakes and the extensive investigations that have been performed in the past century have aided in the assessment of seismic hazards. In contrast, in much of the central and eastern U.S. that have not been subjected to a large earthquake in historical times (outside of New Madrid and Charleston) are judged to have a low hazard, despite the fact that few paleoseismic investigations have been conducted. In these regions, the rates of earthquake activity are an order of magnitude or more lower and quantifying the seismic hazard is not straightforward. Even in regions in the western U.S., the hazard can be underestimated. For example, 30 years ago, the prevailing wisdom was that the Pacific Northwest, outside of the Puget Sound region, did not possess a high hazard. Yet this view has been drastically altered with paleoseismic studies that identified the **M** 9 earthquake potential of the Cascadia subduction zone and previously unrecognized crustal faults.

In this presentation, I present some case histories and discuss some of the issues and challenges in evaluating seismic hazards in the central and eastern U.S. and their implications to seismic design.

Professional Bio

Ivan Wong, Senior Principal Seismologist at Lettis Consultants International, is an internationally recognized expert in seismic hazard analyses with nearly 50 years of experience. He has directed the evaluations of more than 700 critical and important facilities worldwide including some of the largest ever performed in the U.S. such as the Yucca Mountain Project. For FEMA, Ivan has been involved in the education and implementation of the seismic risk assessment software HAZUS. He has been the recipient of 20 USGS NEHRP external research grants that have supported the development of urban probabilistic and scenario hazard maps and other earthquake hazard-related studies.

A major focus in Ivan's career has been earthquake hazards reduction and awareness and public outreach. He has spoken, taught, and lectured at hundreds of events for schools, universities, and professional organizations, and for the general public including the California Academy of Sciences.

In addition to his work, Ivan has been an active EERI member for 46 years including serving on the Board of Directors, as President of the Northern California chapter, Earthquake Spectra editorial board, a Safety of Schools Safety Initiative founding member, Friedman Family lecturer, and numerous committees. In 2024, he was named an Honorary EERI member. Ivan has served as an Associate Editor for Bulletin of the Seismological Society of America for 25 years. Ivan has been a member of numerous scientific and engineering committees/panels including chairing the Working Group on Utah Earthquake Probabilities. He has been particularly active in supporting the USGS in various roles including as a reviewer of the National Seismic Hazard Maps. Ivan has authored or coauthored more than 400 professional publications including numerous guidelines and standards related to seismic safety. From 2017 to 2021, Ivan served on the California State Seismic Safety Commission after being appointed by Governor Jerry Brown.

SUPPLEMENTAL ACTIVITIES

Breakfast with faculty advisor, President & leadership of the EERI student chapter

The breakfast meeting aimed to introduce Mr. Ivan G. Wong to the President & leadership of the EERI student chapter and discuss the current projects and plans of the chapter. Attendees included Mr. Ivan G. Wong, Dr. Shahram Pezeshk, Mehran Davatgari Tafreshi, Mohsen Akhaneh, and Najme Alidadi. Discussions focused on the importance of student involvement in seismic research and potential collaboration opportunities. Photos of the breakfast meeting are included in the attachments.

Lecture by Mr. Ivan G. Wong

The lecture titled "Challenges in Evaluating Seismic Hazards in the Central and Eastern U.S." was presented by Mr. Ivan G. Wong. The lecture focused on understanding earthquake hazards, the limitations of current hazard maps, and the challenges in seismic hazard evaluation. Attendees included students, faculty members, and local geotechnical engineers. The lecture provided valuable insights into seismic design implications and highlighted the need for more comprehensive seismic studies. Photos of the lecture are included in the attachments.

Informal Meeting with Graduate Students

This informal meeting provided an opportunity for graduate students to seek career guidance from Dr. Wong and receive feedback on their research projects. Attendees included Dr. Wong and graduate students from the Civil Engineering and Earthquake Research departments. The discussion covered career paths in seismology, challenges in earthquake hazard assessment, and insights into professional development.

RESULTS, FEEDBACK AND LESSONS LEARNED

The visit of Mr. Ivan G. Wong was a resounding success, providing significant value to all participants.

The students and faculty members highly appreciated Dr. Wong's insights and found his lecture extremely informative.

The informal meeting with graduate students was particularly well-received. Many students expressed that it was highly beneficial for their research and career planning.

ACKNOWLEDGEMENTS

The University of Memphis EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Mr. Ivan G. Wong through their Friedman Family Visiting Professional Program endowment.

We also would like to thank Department of Civil Engineering University of Memphis, Geotechnology, Inc., Chad Stewart and Associates, and several local geotechnical companies for the financial support of the University of Memphis EERI Student Chapter. Special thanks to Najme Alidadi and Mohsen Akhani for organizing this meeting.

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:

- flier for event
- Photos from the breakfast meeting, campus tour, and lecture.



The University of Memphis EERI Student Chapter and the Friedman Family Visiting Professionals Program present the 2024 seminar:

Interface Between Earthquake Science and Engineering: Issues and Challenges in the Central and Eastern U.S.

**Lecture by Dr. Ivan G. Wong
Senior Principal Seismologist**

**Tuesday May 14th: 12:00PM-1:00PM
Engineering Administration Building; Room 102D
3795 Central Avenue
Memphis, TN 38111**

Abstract:

In the past few decades, our understanding of earthquake source processes, the distribution and seismogenic potential of active faults in the U.S., seismic wave propagation and site effects has improved significantly resulting in important advances in our understanding of earthquake hazards throughout the U.S. Much of the central and eastern U.S. that have not been subjected to a large earthquake in historical times (outside of New Madrid and Charleston) are judged to have a low hazard, even though few paleoseismic investigations have been conducted. In this presentation, Dr. Wong will present some case histories and discuss some of the issues and challenges in evaluating seismic hazards in the central and eastern U.S. and their implications to seismic design.

About the Speaker



Dr. Wong is a Senior Principal Seismologist at Lettis Consultants International, is an internationally recognized expert in seismic hazard analyses with nearly 50 years of experience. He has directed the evaluations of more than 700 critical and important facilities worldwide including some of the largest ever performed in the U.S. such as the Yucca Mountain Project. For FEMA, Ivan has been involved in the education and implementation of the seismic risk assessment software HAZUS. He has been the recipient of 20 USGS NEHRP external research grants that have supported the development of urban probabilistic and scenario hazard

maps and other earthquake hazard-related studies. A major focus in Ivan's career has been earthquake hazards reduction and awareness and public outreach. He has spoken, taught, and lectured at hundreds of events for schools, universities, and professional organizations, and for the general public including the California Academy of Science.

Pizza will be provided at 11:30 AM.







