FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM

Visit to University of Toronto: Feb. 23rd, 2023

This report summarizes the visit of **Mr. Erik Bishop** from Reid Middleton Inc. that took place at the University of Toronto on Feb. 23rd, 2023,

ITINERARY OR AGENDA

The agenda of Mr. Bishop's visit to the University of Toronto Civil and Mineral Engineering department is provided below.

TIME:	ACTIVITY:	Significance:
9:00 AM – 10:00 AM	Tour of the University of Toronto St. George Campus	Historic tour of the University of Toronto campus and its various landmarks.
10:00 AM – 11:00 AM	Tour of the University of Toronto Structural Laboratory and testing facilities	Lab tour was led by Mr. Pedram Mortazavi explaining the various apparatus and experiments located in the structural labs.
11:00 AM – 12:30 PM	Early lunch with the EERI team and interested students, faculty and staff	Off campus informal lunch with graduate students and faculty.
12:30 PM – 1:30 PM	Friedman Family Visiting Professional (FFVP) lecture delivered by Mr. Erik Bishop	Lecture Room: GB202 Mr. Bishop delivered his lecture to a large audience of students, faculty, and staff. The lecture was hosted as a "lunch & learn" and the executive team provided catered food and drinks to reach a wider audience.
1:30 PM – 3:00 PM	Reception for open discussion and follow-up questions regarding Mr. Bishop's lecture.	
3:00 PM – 4:00 PM	Tour of downtown Toronto	Informal tour of the Toronto downtown area, visiting landmark sites close to the University of Toronto campus.
4:00 PM – 5:00 PM	Presentation of the Undergraduate Seismic Design Team presentation	Presentations Room: GB217 The undergraduate seismic design team presented previous work carried out and various areas of research under consideration for the seismic design competition and received Mr. Bishop's feedback
N/A	End of formal day	
7:00 PM – 9:00 PM	Dinner with Mr. Bishop and the executive team of the EERI	Off campus informal lunch with available EERI executive team

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

- Mr. Marawan Zaki, President, marawan.zaki@mail.utoronto.ca
- Mr. Henri Monette, Vice-President, henri.monette@mail.utoronto.ca
- Mr. Antoine Pepin, Director of Undergraduate Relations, antoine.pepin@mail.utoronto.ca

- Mr. Nick Seal, Director of Finance, nick.seal@utoronto.ca
- Mr. Josh Hamilton, Director of Events, josh.hamilton@mail.utoronto.ca
- Mr. Pedram Mortazavi, Senior Advisor, pedram.mortazavi@mail.utoronto.ca

FACULTY AND INDUSTRY ADVISORS:

- Faculty Advisor: Dr. Constantin Christopoulos, c.christopoulos@utoronto.ca
- Industry Advisor: Amirahmad Fathieh, afathieh@stephenson-eng.com

VISITING PROFESSIONAL LECTURE OVERVIEW

Mr. Bishop delivered a lecture on the topic of lessons learned from earthquake reconnaissance around the world and applications as a practicing consulting engineering. Our audience of 20 graduate and undergraduate students, faculty, and staff were invited to listen to this presentation and enjoy a catered lunch to further their understanding of earthquake risk and building resilient structures. The lecture featured 5 case studies that Mr. Bishop had personally observed through his involvement with the Learning From Earthquakes (LFE) program conducted by the EERI. For each case study, Mr. Bishop presented an idea of the earthquake event and aftershocks, provided pictures of damaged structures, explained the possible failure mechanism, and gave advice on what could possibly be done to prevent future damage to similar structures. The audience were invited to ask questions during Mr. Bishop's presentation as well as during an informal reception after the presentation, which allowed them to mingle amongst themselves as well as connect with Mr. Bishop.

Figure 1: Mr. Bishop's presentation to the University of Toronto

Lecture Abstract

Erik will share about his personal experiences conducting post-earthquake reconnaissance and response efforts after the following events:

- M8.0 Wenchuan Earthquake in China (2008)
- M8.8 Chile Earthquake & Tsunami (2010)
- M9.1 Great Tohoku, Japan Earthquake & Tsunami (2011)
- M7.1 Puebla, México Earthquake (2017)
- M6.4/7.1 Searles Valley, CA Earthquake Series (2019)

He will share how these lessons learned from these experiences have informed his work as a practicing consulting engineer and will discuss future focuses on the field of earthquake reconnaissance.

Professional Bio

Erik Bishop, PE, SE is an Associate at Reid Middleton, Inc. and has worked globally on a wide variety of earthquake-focused projects. Erik's expertise include new design, seismic evaluation and rehabilitation design for buildings and lifeline utilities, seismic resiliency studies, and the development of seismic instrumentation and earthquake response technologies. Erik has also participated in post-earthquake reconnaissance and response efforts after several of the large earthquakes and tsunamis that have occurred around the world. Subsequently, he has worked in several capacities in order to improve the seismic safety and resiliency of our communities, including providing post-earthquake safety evaluation trainings, working on the development of innovative earthquake response tools for emergency managers, and participating in various earthquake preparedness advocacy and professional committee efforts. He was also selected as a Housner Fellow in 2017 through the Earthquake Engineering Research Institute (EERI).

SUPPLEMENTARY ACTIVITIES

University of Toronto Campus Tour

The campus tour was led by Mr. Marawan Zaki and Mr. Henri Monette, doctoral candidates at the University of Toronto and executive members of the UofT EERI Chapter. This activity provided an opportunity for leisure and learning as we walked through the University of Toronto's historic campus. During the tour, various topics were covered including the university's history, information on the University of Toronto's college systems, landmark buildings and interesting facts about them, and famous alumni.

Laboratory Tour

The laboratory tour was led by Mr. Pedram Mortazavi, a doctoral candidate at the University of Toronto and senior advisor of the UofT EERI Chapter. The tour featured a walkthrough of the main structural testing facilities at the University of Toronto, which is amongst the top testing facilities in North America. During the tour, Pedram described various projects being undertaken at the University of Toronto on various topics including reinforced concrete elements, lateral load resisting systems, advanced material testing, and hybrid simulation. Moreover, Pedram described the ongoing laboratory upgrades at the university of Toronto to install a new adjustable multi-directional loading system which is capable of providing 20,000 tonnes of force in six translational and rotational directions for specimens up to 8 meters tall and 30 meters long.

Figure 2: Structural Laboratory Tour Group (Pictured from left to right: Mr. Pedram Mortazavi, Mr. Erik Bishop, Mr. Henri Monette, Mr. Marawan Zaki)

Undergraduate Seismic Design Team Presentations

The final event of the day was a presentation by the executive members of the University of Toronto Seismic Design team, which competes at the EERI seismic design competition annually. This year, the seismic design team explored topics of supplemental damping under the advice of Mr. Henri Monette to improve the performance of their structure in the competition. The team lead's Grace Hu and Kaison Cheung presented their work to Mr. Bishop, describing their approach to designing the structure, as well as discussing various innovative systems that they are in the process of testing to better improve their performance. Mr. Bishop and the EERI executive team then provided recommendations for future topics to explore to improve their competition standing.

RESULTS, FEEDBACK AND LESSONS LEARNED

Overall, the event was a success on multiple fronts. The lecture delivered by Mr. Bishop was educational and entertaining and provided students, staff, and faculty to learn more about the Learning From Earthquake program and the importance of seismic reconnaissance opportunities. The ancillary events provided an opportunity for both information and leisure in a more relaxed environment hopefully providing Mr. Bishop of fond memories of his first visit to Toronto.

This year our largest challenge was attracting an audience to the event as due to scheduling issues the most optimal date fell on reading week. In order to tackle this issue the executive team decided to host the event as a "lunch & learn", doing so resulted in a great turnout and a fruitful discussion between all members of the Civil and Mineral department.

In the future, the chapter would welcome visiting professionals presenting a variety of topics, especially those related to Mr. Bishop's presentation, including:

- Stories of success or failure of seismic systems and what we can learn from them.
- Lessons learned from post-earthquake reconnaissance and the benefit of experiential knowledge.
- Topics on base isolation and other advanced seismic force resisting systems.

ACKNOWLEDGEMENTS

The University of Toronto EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Mr. Erik Bishop through their Friedman Family Visiting Professional Program endowment.

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, i.e. flier for event

University of Toronto
Earthquake Engineering Research Institute
Student Chapter

EERI

LESSONS LEARNED FROM EARTHQUAKE RECONNAISSANCE AROUND THE WORLD AND APPLICATIONS AS A PRACTICING CONSULTING ENGINEER

Mr. Erik Bishop, PE, SE - Structural Associate at Reid Middleton Inc.

Thursday, February 23rd, 2023 at 12:30 PM Rm. 202 Galbraith Building

Presentation content:

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Scan to register for the session

For more information, or to join the U of T EERI Student Chapter, email: uoft.eeri@gmail.com

Figure 3: Flier of Mr. Bishop's presentation