FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to University of Toronto: March 12th, 2025

This report summarizes the visit of **Mr. Rafael Sabelli** from alter P Moore that took place at the University of Toronto on March 12th, 2025.

ITINERARY OR AGENDA

TIME:	ACTIVITY:
March 11th, 2025	
6:00 PM - 8:00 PM	Dinner with the UT-EERI Team and UofT community members
March 12th, 2025	
10:00 AM - 11:00 AM	Undergraduate Seismic Design Team presentation and consultation
11:00 AM - 11:30 AM	Tour of the University of Toronto Structural Laboratory
11:30 AM - 12:30 PM	Free period – Personal work-time
12:30 PM - 02:00 PM	Lunch with UT-EERI Team and UofT community members
02:00 PM - 03:30 PM	FFVP Lecture and Q&A – Lunch & Learn format
Formal End of Day	

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

- Henri Monette, President, henri.monette@mail.utoronto.ca
- Marawan Zaki, Vice President and Director of Finance, marawan.zaki@mail.utoronto.ca
- Antoine Pepin, Director of Undergraduate Relations and socials, antoine.pepin@mail.utoronto.ca
- Professor Constantin Christopoulos

VISITING PROFESSIONAL LECTURE OVERVIEW

Lecture Abstract

The UT-EERI chapter was thrilled to welcome Mr. Rafael Sabelli, S.E., Senior Principal and Director of Seismic Design at Walter P Moore, as part of the Friedman Family Visiting Professionals program hosted by the University of Toronto's Civil and Mineral Engineering Department.

Mr. Sabelli is widely recognized for his leadership in seismic design and has been honored with numerous accolades, including a Lifetime Achievement Award and the T.R. Higgins Lectureship from AISC. He plays an active role on several influential code committees, including the AISC Committee on Specifications (vice-chair of the Seismic Provisions) and the ASCE 7 Seismic Task Committee, and he is the co-author of Ductile Design of Steel Structures. His expertise and dedication to advancing seismic design have made a lasting impact on both the profession and the built environment.

The highlight of Mr. Sabelli's visit was his engaging lecture titled, "Divide and Conquer: How a Multi-Billion-Dollar Challenge was Met through Careful and Creative Division into Manageable Components," where he provided a behind-the-scenes look at the structural and geotechnical complexities of the state-of-the-art SoFi Stadium—home to Superbowl LVI. From deep excavations and long-span roof systems to navigating multiple seismic fault zones and coordinating independent peer reviews, Mr. Sabelli illustrated how creative structural strategies and collaboration helped realize one of the most complex stadium projects in North America.

Approximately 20 students, faculty members, and industry professionals attended the event in-person and virtually, contributing to a lively Q&A and discussion following the lecture. Attendees appreciated the depth of technical detail and the valuable career insights shared by Mr. Sabelli, particularly in the context of interdisciplinary coordination and seismic design challenges.

During his visit, Mr. Sabelli also toured the University of Toronto's structural engineering labs and testing facilities. The UT-EERI team had the opportunity to present their ongoing seismic design work. Mr. Sabelli offered thoughtful feedback and discussed parallels with real-world engineering problems.

The UT-EERI chapter extends its sincere thanks to Mr. Sabelli, the EERI, the Friedman Family Visiting Professionals program, and all those who helped make this inspiring and successful event possible.

Figure 1: Picture taken after Mr. Rafael Sabelli's lecture with in-person attendees.

Lecture Abstract:

The state-of-the-art SoFi Stadium was showcased in Superbowl LVI in 2022, a fitting nod to several years of design and construction work. This project posed a tremendous structural and geotechnical challenge, including deep excavation, dramatic soil retention, high seismicity, and long spans. To meet this challenge, the design team divided the project to create a small set of large, but manageable, component projects. This presentation will discuss in detail the specialty design and construction management of all of these systems, the difficulties in having four separate geotechnical consultants/designers on a project, the challenges of formulating an independent peer review panel and obtaining their review consensus on a complex series of designs, and managing interaction between the City of Inglewood plan check process and the peer review panel.

Professional Bio

Rafael Sabelli is a nationally recognized leader in seismic and structural engineering, serving as Senior Principal and Director of Seismic Design at Walter P Moore. Based in San Francisco, Rafael brings over 30 years of experience in the design of complex, high-performance buildings in seismic zones, with a focus on innovation, resilience, and constructability. He is the Structural Engineer of Record for landmark projects such as SoFi Stadium in Los Angeles and the Air Traffic Control Tower at San Francisco International Airport. His expertise lies in the design and detailing of steel and composite systems to ensure ductile behavior and robust seismic performance, particularly in tall and essential facilities. Rafael is a widely respected voice in the structural engineering community. He serves as Vice-Chair of the AISC Seismic Provisions Committee, Chair of the AISC Seismic Design Manual Committee, and a voting member of the ASCE 7 Seismic Subcommittee. His contributions to seismic design standards and technical literature have helped shape the national approach to resilient structural systems.

A frequent speaker and educator, Rafael co-authored the widely used textbook Ductile Design of Steel Structures and has delivered lectures across North America. He has been honored with numerous awards, including the AISC Lifetime Achievement Award, the SEAOC Fellow designation, and the T.R. Higgins Lectureship Award for excellence in structural research. Rafael holds a Bachelor of Arts from the University of Chicago and both a Master of Architecture and a Master of Science in Civil Engineering from the University of California, Berkeley. In 2025, he was inducted into UC Berkeley's Academy of Distinguished Alumni for his lasting contributions to structural engineering and seismic design.

SUPPLEMENTAL ACTIVITES

Dinner on March 11th, 2025

Upon arriving in Toronto, the UT-EERI executive members took Mr. Rafael Sabelli to the CN tour sky view restaurant. Situated at the top of the CN tour, this restaurant offers a 360 degrees view of Toronto while serving delicious French cuisine. The group had the opportunity to be introduced to one another and a great discussion on structural seismic engineering ensued.

Undergraduate Student Presentation

To start off the day, The University of Toronto Seismic Design Team (UTSD) presented to Mr. Sabelli the work that they had conducted throughout the school year in preparation for the 2025 Seismic Design Competition. Mr. James Bannister and Mr. Bright Lin first started by discussing the details of the Seismic Design Competition and presented their design of this year's tower, as well as its response under a non-destructive ground motion. They also discussed the custom shake table which the team had built in order to test their tower for future events.

Finally, a fruitful conversation was had where Mr. Sabelli shared his insight into key considerations for the team to keep in mind as well as some general advice.

University of Toronto – Structural Testing Facility Tour

After the Undergraduate Seismic Design Team presentation, Mr. Rafael Sabelli was given a tour of the University of Toronto Civil and Mineral Engineering Structural Testing Facility. The tour was led by Messrs. Henri Monette and Antoine Pépin of the UT-EERI executive team. The tour focused on the available testing devices and ongoing research at the University of Toronto as well as the current undergoing laboratory upgrades. The picture below was taken after the tour.

Lunch with the University of Toronto Structural Engineering Community

Prior to his lecture, the UT-EERI chapter took Mr. Rafael Sabelli to the Gallery Grill restaurant located at Hart House on the University of Toronto campus. We also took the opportunity to do a campus tour, giving insight on the rich historical background of the UofT St-George Campus.

RESULTS, FEEDBACK AND LESSONS LEARNED

Overall, the UT-EERI team was very pleased with the event and are extremely thankful to Mr. Sabelli for sharing his time and expertise with our community. We have received a lot of great feedback from the undergraduate and graduate students that the talk was highly inspiring and that they were able to take multiple key lessons from it. Mr. Sabelli's lecture provided a great opportunity for the University of Toronto structural engineering community to learn more about historical retrofitting a niche structural application that is seldom discussed but one with a very rich experience. Interest in the EERI chapter and earthquake engineering has noticeable increased.

While we were initially worried that attendance may be low due to the approach of the examination period, we were pleasantly surprised to see such a great turnout of students, faculty, staff, and industry partners in attendance. Even still we are planning further improvements to increase the attendance of undergraduate students.

Below is a list of lessons learned by the 2024-2025 UT-EERI team and goals for future teams:

- The importance of expanding our online presence
    - The 2024-2025 UT-EERI team started an initiative for expanding our online presence through the use of social media. Instagram, Facebook, and LinkedIn accounts were created by the team to advertise UT-EERI events, leading to higher attendance rates. In the future, we hope to continue using these platforms to announce events, but also to create educational posts, articles, and videos as part of our commitment to education. Another initiative that we hope will be adopted is the development of a website for the UT-EERI that will act as a hub for information about UT-EERI, our initiatives, and our public content. This is an objective that we had identified last year and that we want to continue pushing forward next year.
- Initiatives for increasing the UT-EERI professional network
    - The 2024-2025 team was committed to increasing our alumni and professional network, and connecting UofT students with professionals and academics. We hope that future teams will continue to expand this network, invite more professional speakers, host networking events and coffee chats and providing value to the broader Toronto Earthquake Engineering Community. We were able to initiate discussion with several potential industry partners with which we hope to start collaborating more actively next year.
- Scaling of our seminars and guest lectures

- The UT-EERI team was very happy with the quantity and diversity of graduate seminars and guest lectures held during the 2024-2025 year. We hope that future teams will be able to improve on both aspects of these events to benefit the broad community.

ACKNOWLEDGEMENTS

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

The Chapter is also grateful to the Department of Civil and Mineral Engineering, You're Next Career Network at U of T, Engineering Society at U of T, and the Engineering Alumni Association at the University of Toronto, for their financial support.

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

University of Toronto
Earthquake Engineering Research Institute
Student Chapter

EERI

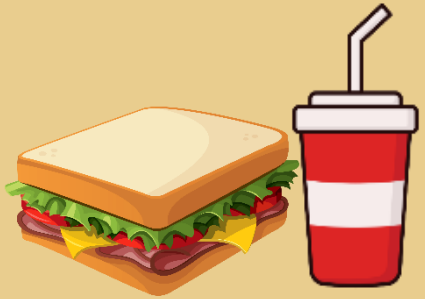
Date: March 12th, 1:30-3:00 PM EST
In-person Session: Sandford Fleming Rm. SF1009
Zoom Session: ID: 842 3246 9584
Pass: 498226

Guest Lecture by Mr. Rafael Sabelli, S.E.
Senior Principal Director of Seismic Design at Walter P Moore

Divide and Conquer: How a Multi-Billion-Dollar Challenge was Met through Careful and Creative Division into Manageable Components

Lecture Abstract: The state-of-the-art SoFi Stadium was showcased in Superbowl LVI in 2022, a fitting nod to several years of design and construction work. This project posed a tremendous structural and geotechnical challenge, including deep excavation, dramatic soil retention, high seismicity, and long spans. To meet this challenge, the design team divided the project to create a small set of large, but manageable, component projects. This presentation will discuss in detail the specialty design and construction management of all of these systems, the difficulties in having four separate geotechnical consultants/designers on a project, the challenges of formulating an independent peer review panel and obtaining their review consensus on a complex series of designs, and managing interaction between the City of Inglewood plan check process and the peer review panel.

Register here



Food and Drinks will be provided!!!

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