FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to University of Victoria: March 21st, 2025

This report summarizes the visit of **Dr. Faiz Makdisi** from Gannett Fleming TranSystems Inc., that took place at the University of Victoria on March 21st, 2025.

ITINERARY OR AGENDA

TIME:	ACTIVITY:
9:00 AM – 10:00 AM	Student Chapter President meets & welcomes Visiting Professional
10:00 AM – 11:00 AM	Tour of campus Engineering buildings, Civil Engineering lab spaces, Student Chapter lab space
11:00 AM – 1:45 PM	Guest lecture by Visiting Professional with networking time before and after
1:45 PM – 2:30 PM	Tour of geotechnical graduate labs
2:30 PM – 4:00 PM	Lunch on campus with EERI Student Chapter members
4:00 PM – 7:00 PM	Break for the Visiting Professional to return to hotel and recuperate
7:00 PM – 10:00 PM	Dinner at downtown Victoria with EERI Student Chapter members, faculty advisor, and other professors

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZERS:

- Christina Chen, Secretary, uviceeri@gmail.com
- Maeve McManus, President, uviceeri@gmail.com
- Sardar Malek, Faculty Advisor and Professor, smalek@uvic.ca
- Cheng Lin, Associate Professor chenglin918@uvic.ca

VISITING PROFESSIONAL LECTURE OVERVIEW

Faiz Makdisi's presentation engaged undergraduate and graduate students as well as faculty members. The Student Chapter president and faculty advisor introduced themselves before Makdisi began his lecture. A poster was distributed by email and social media. Registration showed 27 people signed up and about 30 showed. The lecture was catered and allowed for plenty of networking and mingling time. The lecture was about 90 minutes long with time at the end for many questions from Faculty and students discussing methodologies and geotechnical career advice.

Lecture Abstract

Makdisi's presentation will describe the effects of earthquakes on dams, and the state-of-practice for evaluating the seismic stability and earthquake induced deformations of embankments and slopes. It will also include procedures and examples from current engineering practices as well as case histories of seismic retrofits for embankment dams.

The presentation will describe the effects of earthquakes on dams, and the state-of-practice for evaluating the seismic stability and earthquake-induced deformations of embankments and slopes. Methods for evaluating the stability of slopes and embankments during earthquakes have evolved from estimating factors of safety while applying to the slope a horizontal inertial force (termed the pseudo-static seismic coefficient), to

estimating deformations using Newmark's concept of yield acceleration and sliding block analyses, to detailed two-dimensional dynamic response analyses using equivalent linear approaches, and more recently, to evaluating deformations using fully-coupled nonlinear response and deformation analyses. The presentation will describe procedures and examples from current practice for: a) estimating earthquake ground motions at a dam site; b) estimating the dynamic response and earthquake-induced accelerations within an embankment; c) estimating post-earthquake factors of safety and yield accelerations using limit equilibrium slope stability analysis; and c) estimating earthquake-induced deformations. Simplified methods as well as detailed equivalent linear analyses, and recently developed nonlinear analyses will be described. Case histories of seismic retrofits of embankment dams will also be presented.

Professional Bio

Dr. Faiz Makdisi has over 45 years of specialized experience in geotechnical and earthquake engineering. He has been actively involved in studies of the seismic behavior of earth and rock fill dams and embankments. Recently, Makdisi has been involved in development of seismic design criteria, evaluation of seismic stability, and design of alternative remedial measures for more than 25 embankment dams.




SUPPLEMENTAL ACTIVITES

Tours of Lab Spaces

In the morning, the President led the Visiting Professional on a brief tour of the campus with a focus on lab spaces. UVic is characterized by green spaces and exciting new construction, such as an almost-complete new Engineering building expansion. The focus for the structural lab was watching a CLT Panel test in the CARSA lab. The Visiting Professional was also shown the shake table and prototype tower we use to test for this year's Seismic Design Competition.

After the lecture, other EERI members joined along with some Faculty members to view the geotechnical labs, which are governed by graduate research. Approximately 17 people attended the tour. See photos on the next page.

Lunch with EERI Student Chapter members

Lunch was held at the graduate restaurant on campus, the Grad House, with 11 students. The lunch allowed for informal conversations regarding students' roles in the Student Chapter or Seismic Design team, our progress, career interests, and more.

Dinner with EERI Student Chapter members and Faculty

Dinner was held at a local restaurant, 10 Acres Commons, for the Visiting Professional to spend time with Faculty members. Attendees included 7 EERI Student Chapter members and 3 Faculty members.

RESULTS, FEEDBACK AND LESSONS LEARNED

The reception of the lecture and activities was well received, with high interest and attendee turnout. The organization of the visit went well. Challenges during the coordination process of the Visiting Professional's visit was coordinating lab tours last-minute and inviting faculty to dinner last minute. For example, the geotechnical lab tour was organized just the day prior. For future visits, our student chapter should coordinate and confirm well in advance.

Future itineraries could include organizing visits at times where labs are occurring, arranging a campus tour with a golf cart, seeing the tower construction in preparation for SDC, and planning more networking with faculty and graduate students. The student chapter would like to invite a structural engineer, such as James Malley who has previously expressed interest in visiting UVic to our faculty advisor, Sardar Malek. Structural topics such as retrofits, seismic design, and damper design would be interesting for our next FFVP lecture.

ACKNOWLEDGEMENTS

The University of Victoria EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Dr. Faiz Makdisi through their Friedman Family Visiting Professional Program endowment.

We'd like to extend our gratitude for Dr. Faiz Makdisi for offering his time, interesting presentation, and wonderful advice and encouragement to us as graduating students. His geotechnical expertise, passion, and humor made this visit a memorable experience for us all.

LIST OF ATTACHMENTS

Included at the end of this report is the flier that was distributed on LinkedIn, email, and Instagram:

EERI UVic Chapter (UVic Seismic) invites you to an earthquake engineering guest lecture.

FAIZ MAKDISI

SEISMIC STABILITY OF EMBANKMENT DAMS

March 21, 2025
11:30 am - 1:30 pm
ECS 660

Faiz I. Makdisi
PhD, PE, D.GE
Gannett Fleming
TranSystems, Inc.
Oakland, CA

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His presentation will describe the effects of earthquakes on dams, and the state-of-practice for evaluating the seismic stability and earthquake induced deformations of embankments and slopes. It will also include procedures and examples from current engineering practices as well as case histories of seismic retrofits for embankment dams.

Light refreshments provided **Registration required - see link provided**