VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY EERI STUDENT CHAPTER 2014-2015 ANNUAL REPORT

GENERAL CHAPTER INFORMATION

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2014-2015 Officers (Executive Committee):

President: Ashly Cabas

Vice President: Marcus Freeman

Secretary: Trevor Walker

Treasurer: Adam Phillips

Faculty Advisor:

Dr. Ioannis Koutromanos P.E., Assistant Professor
Department of Civil and Environmental Engineering
Virginia Polytechnic Institute and State University

VT EERI Executive Committee (left to right) Adam Phillips, Ioannis Koutromanos, Ashly Cabas, Marcus Freeman, Trevor Walker

Community Outreach Activity Programs

Kids' Tech University (KTU) at Virginia Tech

This was the first year that the Chapter took part in Kids' Tech University. Kids' Tech strives to create the future workforce in science, technology, engineering, and mathematics (STEM) by sparking kids' interest in these fields. The Kids Tech curriculum feature three parts including: interactive sessions, hands-on activities and virtual labs. This year the Chapter provided kids with a small scale liquefaction tank demonstration. Kids built Lego models and placed them on the liquefaction tank. After which, a dynamic load was induced and the experiment was run while fundamental geotechnical earthquake engineering concepts were illustrated.

President Ashly Cabas welcoming kids to Kids' Tech

VP Marcus Freeman interacting with kids

Liquefaction workstation at Kids' Tech

Marcus demonstrating liquefaction tank

EERI Annual Meeting

Award – The Annual EERI Student Paper Competition (Spring 2015)

Chapter President Ashly Cabas was awarded the 2014 EERI Outstanding Graduate Student paper. Her paper was titled, *V_s-κ Correction factors for Input Ground Motions used in Seismic Site Response Analyses*. Ashly presented her work at the 67th EERI annual meeting in Boston, Massachusetts. She also gave a presentation at the Young Researcher's Symposium, organized by the EERI Student Leadership Council, where she provided an overview of her research and encouraged undergraduate students to pursue a graduate degree.

Seminars and Guest Lectures

Seminar – Dr. Judith Mitrani-Reiser, Assistant Professor of Civil Engineering, John Hopkins University (Sep 26, 2014)

Dr. Mitrani-Reiser's presentation was co-sponsored by the Virginia Tech EERI Student Chapter and the Virginia Tech Institute for Critical Technology and Applied Science. Dr. Mitrani-Reiser's presented a risk analysis framework for quantifying and predicting the loss, recovery, and resilience of healthcare facilities. This framework accounts for loss of service due to building and utility damage, as well as impacts to key personnel and resources/supplies needed to provide clinical and nonclinical services. Dr. Mitrani-Reiser's presentation also showed a standardized methodology to collect and analyze field data of critical building systems to better correlate physical damage with loss of functionality of healthcare facilities.

Seminar – Dr. Siamak Sattar, Research Structural Engineer, National Institute of Standards & Technology (Nov 4, 2014)

Dr. Sattar presented the influence of masonry infill walls and other building characteristics on seismic collapse of concrete frame buildings. He thoroughly compared various software models developed at NIST and actively engaged with Virginia Tech professors who have been developing their own models. Dr. Sattar also answered questions from a large number of structural engineering students. During his time at Virginia Tech Dr. Sattar was given a tour of the structural engineering laboratory and met with various faculty members. The VT EERI Student Chapter greatly appreciated Dr. Sattar's visit to Virginia Tech.

Seminar – Dr. Richard Sause, Professor of Structural Engineering, Lehigh University (Nov 11, 2014)

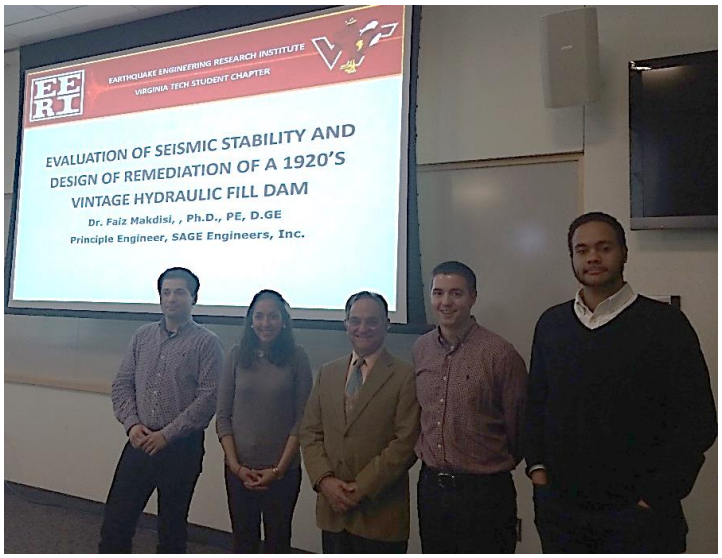
Dr. Sause presented "Self-Centering Damage-Free Earthquake Resistant Structural Systems" as part of his distinguished lecture at Virginia Tech. Dr. Sause's presentation was in parallel with research currently ongoing at Virginia Tech. Thus, Dr. Sause was given a tour of the structures laboratory and met with a handful of professors in the Department of Civil and Environmental Engineering. His work is well known throughout the seismic engineering community and it was an honor to have him as a guest speaker.

Seminar – Mat Daw, Principle, Keast & Hood Structural Engineers, Washington D.C. (Feb 18, 2015)

Mr. Daw presented "Seismic Evaluations – Learning from the Mineral Virginia Earthquake" to an audience of over 40 students and academic professionals. Mr. Daw presented case studies of identified building damage and described repair and stabilization approaches that where implemented. Additionally, he presented general approaches to emergency response and evaluation of damaged buildings in accordance with the national standard, ATC-20, established by the Applied Technology Council. Following his presentation, Mr. Daw meet with a Virginia Tech seismology professor to discuss future works relating to the Mineral Virginia Earthquake.

Friedman Family Visiting Professionals Program – Dr. Faiz Makdisi, Principle Engineer, SAGE Engineers, Oakland, California (May 1, 2015)

Dr. Faiz Makdisi presented the "Evaluation of Seismic Stability and Design of Remediation of a 1920's Vintage Hydraulic Fill Dam" as part of the EERI Friedman Family Visiting Professionals lecture series. Dr. Makdisi described ground motion studies, field investigations, engineering analyses, and the design of seismic retrofits to improve the seismic performance of the dam. Dr. Makdisi met privately with eight Virginia Tech faculty members, toured the geotechnical and structural engineering laboratories, and participated in a joint lunch event with Dr. Kenneth Stokoe. Following his presentation Dr. Makdisi attended dinner with various faculty members. Dr. Makdisi's presentation was well received by a diverse audience of structural engineering students and geotechnical students and Virginia Tech professors.



Friedman Family Visiting Professional Dr. Faiz Makdisi with executive committee

Audience during Dr. Faiz Makdisi's presentation

Audience during Mat Daw's presentation

Social Activities

The VT EERI Student Chapter began hosting social nights during the Spring 2015 semester to promote the interaction between students and professors from various academic departments. Social nights also serve as a means to inform students about the purpose of VT EERI and the benefits of becoming a student member. This event also extends beyond earthquake engineering to promote the interaction between undergraduate students and graduate students. Undergraduate students who wish to pursue an advanced degree may sometimes be on the fence as to which engineering track is best for them. During social nights these students have the opportunity to ask questions to current graduates and professors.

Graduate students interacting with professors during social night