Friedman Family Visiting Professionals Program

Visit to University of California Davis: April 4th, 2024

This report summarizes the visit of **Jay Wilson** from Clackamas County Disaster Management that took place at the University of California at Davis on April 4th, 2024

Itinerary or Agenda

TIME:	ACTIVITY:
10:00 am – 11:00 am	Meeting with Dr. Michael Gardner
11:00 am – 11:45 am	Student Discussion: Community Resilience and Policy Making
12:00 pm – 01:15 pm	Friedman Family Visiting Professionals Program Lecture
01:15 pm – 02:15 pm	Lunch with geotechnical and structural students
02:15 pm – 02:45 pm	Tour of Structural and Geotechnical labs
02:45 pm – 04:00 pm	Tour of Centrifuge and meeting with Dr. Katerina Ziotopoulou

Student Chapter Visit Planning Committee

ORGANIZER(S):

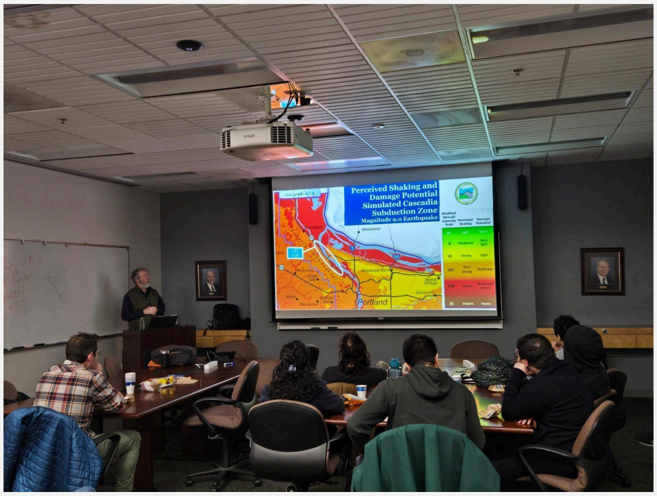
Role	Name	EERI Member Number	Email	Student Status
Co-President	Aditya Jhunjhunwala	32731	arjhunjhunwala@ucdavis.edu	PhD Student
Co-President	Laura Luna	32599	luna@ucdavis.edu	PhD Student
Secretary	Jose Luis Caisapanta	35186	jlcaisapanta@ucdavis.edu	PhD Student
Treasurer	Maziar Mivehchi	35222	mmivehchi@ucdavis.edu	PhD Student

FACULTY ADVISOR:

- Professor Sashi K. Kunnath, skkunnath@ucdavis.edu

Visiting Professional Lecture Overview

The chapter had the honor of hosting Jay Wilson, who presented a case study entitled "*Oregon's Critical Energy Infrastructure Hub*".The lecture provided students with an in-depth understanding of the Critical Energy Infrastructure (CEI) Hub in Portland, Oregon, focusing on its seismic vulnerabilities and the potential for a catastrophic oil spill during a Cascadia Subduction Zone earthquake. It explored the misalignment between current seismic, climate, environmental, and social equity policies and the need to integrate these efforts to reduce emissions and seismic risk. The lecture was attended by approximately 20 students and faculty, with coffee and snacks provided for attendees.



Friedman Family Visiting Professional Program Lecture, presented by Dr. Jay Wilson

Lecture Abstract

Oregon's Critical Energy Infrastructure Hub – A Case Study

Aligning seismic mitigation policies with climate adaptation to avoid an environmental catastrophe and leverage the transition from fossil fuels to green energy

In Oregon, there is a six-mile stretch of the lower Willamette River in Portland where over 90% of the state's petroleum products, like gasoline, diesel, and asphalt, are stored in large old tanks on extremely poor soils. It's called the Critical Energy Infrastructure (CEI) Hub. Counting in at over 400 storage tanks holding approximately 360 million gallons of petroleum products, only twelve were constructed with "adequate" seismic design codes. During a Cascadia Subduction Zone earthquake, these facilities will have cascading failures due to long-duration and long-period amplified shaking that will produce liquefaction, differential settlement and lateral spreading – likely creating the worst oil spill in U.S. history.

Oregon has a Climate Protection Program with goals to reduce emissions 50% by 2035 and 90% by 2050, but as of now, it does not include the CEI Hub as a factor in its goals or strategies. Can we leverage the need to reduce fuel use with the need to reduce seismic risk? Unfortunately, our seismic, climate, environmental, and social equity policies are not in alignment and compete for political attention and funding. Fortunately, there are multiple wins in this situation if policy makers, private industry, community members and environmental activists can find common ground. We need to define this as a resilience imperative and create a unified 2050 vision to align these policies and capitalize on the shared benefits.

Professional Bio

Jay Wilson is the Clackamas County Resilience Coordinator with the Department of Disaster Management and spearheads the County's efforts to reduce risks and assess hazards including flood, earthquake, wildfire, volcano, and climate change impacts. Mr. Wilson is the past-Chair (2014-17) of the Oregon Seismic Safety Policy Advisory Commission (OSSPAC) and previously worked for Oregon Emergency Management as the Earthquake, Tsunami, and Volcano Programs Coordinator and for five years as a Mitigation Reservist with FEMA Regions IX and X.

Jay is a former Resilience Fellow with the National Institute of Standards and Technology during the development of the 2015 Community Resilience Planning Guide. He is a member of the Earthquake Engineering Research Institute and has completed post-earthquake reconnaissance trips to Japan (2011) and Central-Italy (2017). Jay holds M.A. in geography and B.A. in film and lives in Portland, Oregon.

SUPPLEMENTAL ACTIVITIES

Student Discussion: Community Resilience and Policy Making

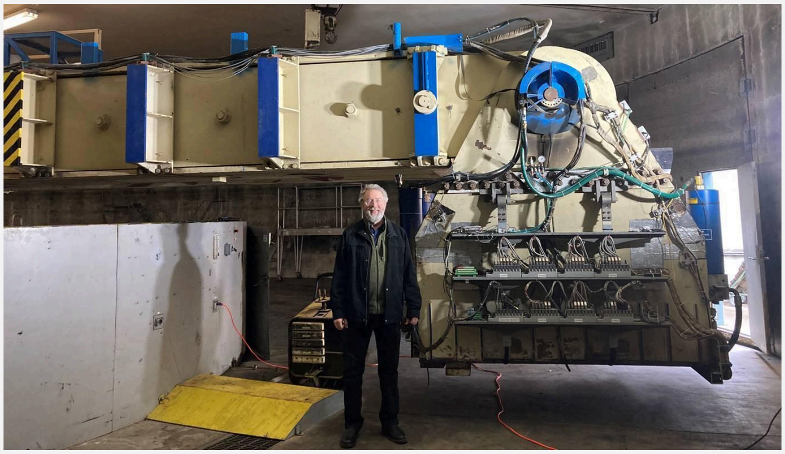
Before the lecture, Jay had an informal discussion with graduate students about Community Resilience and Policy Making. During this discussion, they explored how graduate students can pave their paths into policymaking roles.

Tour of the Geotechnical and Structural labs with PhD students

After Lunch, the PhD students from Structural and Geotechnical engineering gave a lab tour to Jay and briefed him with the experimental and computational research being done at UC Davis.

Meeting with Prof. Michael Gardner and Prof. Katerina Ziotopoulou

Geotechnical faculty Dr. Michael Gardner and Dr. Katerina Ziotopoulou had one-on-one meetings with Jay and offered a tour of the Center for Geotechnical Modeling centrifuge facilities.



Jay with the 9 meter radius centrifuge

RESULTS, FEEDBACK AND LESSONS LEARNED

The EERI Student chapter at UC Davis is grateful for the opportunity to participate in the Friedman Family Visiting Professional program and looks forward to the next opportunity to interact with Earthquake Engineering professionals.

The visit by Jay Wilson proved to be an insightful and inspiring occasion for all participating students. Interacting with him provided a unique opportunity to delve into the intricacies of policy making and gain practical knowledge firsthand.

Acknowledgements

The UC Davis EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Jay Wilson through their Friedman Family Visiting Professional Program endowment.

The UC Davis EERI Student Chapter also acknowledges the support by the Graduate Geotechnical Student Society at UC Davis for sponsoring the refreshments during the seminar and the lunch of Jay Wilson with students.

List of Attachments

- Announcement for event
- Slideshow for EERI student chapter

Earthquake Engineering Research Institute Friedman Family Lecture

Oregon's Critical Energy Infrastructure Hub – A Case Study

Aligning seismic mitigation policies with climate adaptation to avoid an environmental catastrophe and leverage the transition from fossil fuels to green energy

Student Chapter at UC Davis

GGSS at UC Davis

Speaker: Jay Wilson

Resilience Coordinator, Clackamas County Disaster Management

Thursday, April 4th @ 12:00 p.m.
Room 3102, Ghausi Hall

ABSTRACT

In Oregon, there is a six-mile stretch of the lower Willamette River in Portland where over 90% of the state's petroleum products, like gasoline, diesel, and asphalt, are stored in large old tanks on extremely poor soils. It's called the Critical Energy Infrastructure (CEI) Hub. Counting in at over 400 storage tanks holding approximately 360 million of gallons of petroleum products, only twelve were constructed with "adequate" seismic design codes. During a Cascadia Subduction Zone earthquake, these facilities will have cascading failures due to long-duration and long-period amplified shaking, that will produce liquefaction, differential settlement and lateral spreading – likely creating the worst oil spill in U.S. history.

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BIOGRAPHY

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Earthquake Engineering Research Institute

Friedman Family Lecture

Hosted by:

EERI Student Chapter @ UC Davis

Geotechnical Graduate Student Society @ UC Davis

April 4, 2024

About EERI

EERI is the leading non-profit membership org that **connects those dedicated to understanding earthquake risk and increasing earthquake resilience** in communities worldwide.

www.eeri.org

Diverse membership of researchers, practitioners, and students in:

- Engineering
- Geoscience
- Social Science
- Architecture
- Planning
- Government
- Emergency Management
- Public Health
- Policy Making

Why EERI?

CONNECT: *We bring people and disciplines together to make an impact.*

LEARN: *We offer opportunities for you to learn and share the latest research, strategies, and best practices.*

LEAD: *We provide emerging and established leaders with the tools and opportunities to make a case for earthquake resilience, wherever you are.*

Membership Benefits for Students

- *Friedman Family **Visiting Professionals** Program*
- *EERI Competitions:*
    - *Seismic Design*
    - *Student Paper*
    - *Fellowships*
- ***Registration Grants** to EERI meetings*
- *Online access to **Earthquake Spectra***
- *and more!*

Are You Graduating?

- *Join the Student Leadership Council (SLC)*
- *Join the **Younger Members Committee (YMC)***
- *Join an EERI regional chapter*
- *Mentor a Seismic Design Competition team*
- *Apply for the next LFE Travel Study trip*

*Student members get the **first year of young professional membership FREE** and reduced rates for the next 4 years!*

Email eeri@eeri.org to express your interest.

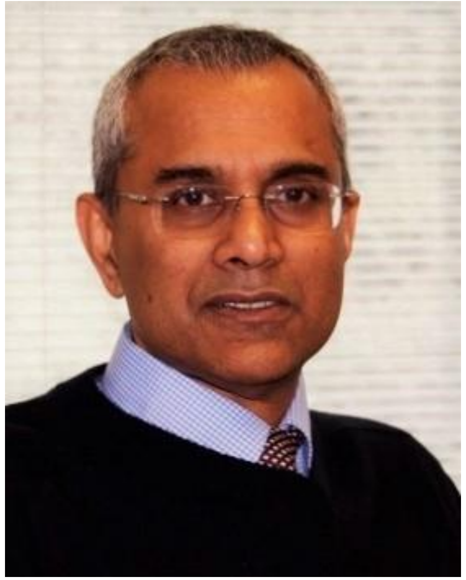
EERI UC Davis Student Chapter – Officers

Jose Luis Caisapanta

Aditya Jhunjhunwala

Laura Luna

Maziar Mivehchi



Prof. Sashi Kunnath
Professor Advisor

EERI UC Davis Student Chapter – Activities

- *Undergraduate Seismic Design Competition – We have a UCD team this year!*
- *Involvement with the EERI Young Member Forum activities*
- *Friedman Family Visiting Professional Lecture*
- *Seminars, social activities and outreach events*

Oregon’s Critical Energy Infrastructure Hub
A Case Study

Jay Wilson

Resilience Coordinator, Clackamas County Disaster Management

April 4, 2024