

# FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM

## Visit to Virginia Tech: February 3, 2022



This report summarizes the visit of Ms. Janiele Maffei from the California Earthquake Authority that took place at Virginia Tech on February 3, 2022.

### ITINERARY OR AGENDA

TIME:	ACTIVITY:
4:00 PM – 4:45 PM	Research roundtable discussion with graduate students and faculty conducting earthquake engineering related research
5:00 PM – 6:15 PM	Guest lecture by Visiting Professional
6:30 PM – 7:30 PM	Meet and Greet with Virginia Tech Students

### STUDENT CHAPTER VISIT PLANNING COMMITTEE

#### LEAD ORGANIZER(S):

- Abdelrahman Alsardi, Co-President, [alsardi@vt.edu](mailto:alsardi@vt.edu)
- Tat Shing Thum, Co-President, [tat2@vt.edu](mailto:tat2@vt.edu)
- Quinten Prieur, Secretary, [acprieur@vt.edu](mailto:acprieur@vt.edu)
- Dante Walker, Undergraduate Seismic Design Team Captain, [dantew@vt.edu](mailto:dantew@vt.edu)
- Adrian Rodriguez-Marek, Faculty Advisor, [adrianrm@vt.edu](mailto:adrianrm@vt.edu)

### VISITING PROFESSIONAL LECTURE OVERVIEW

Ms. Maffei's presentation was both well-attended (~38 students and faculty from the geotechnical and structural engineering departments, primarily) and well-received by the audience. Ms. Maffei presented on the expensive and disruptive earthquake risks to California houses, creative solutions developed by seismic engineers to prevent such risks, and how California public policy is implementing those solutions through leadership and grants. The presentation was interesting to the audience not just because of the engineering solutions for earthquakes, but how much more awareness for earthquake risk there is in comparison to Virginia Tech and the east coast of the US.

#### Lecture Abstract

Earthquakes are low probability, high consequence events. Even in California, a state with two-thirds of the US earthquake risk, damaging earthquakes don't happen that often. However, when they do happen, they can be lethal and cause billions of dollars of damage – most of which is the responsibility of private building owners and homeowners. Fortunately for homeowners, cost-effective retrofit solutions and grants are available. In 2010 the Governor of California signed into law AB 2746 (Blakeslee) authorizing the California Earthquake Authority (CEA) to contract for the services of a chief mitigation officer (CMO). The CEA hired Structural Engineer Ms. Maffei as the CMO in May 2011. As CMO, Ms Maffei has overseen the development of building codes for residential seismic retrofit, research quantifying the benefits of residential retrofits, and development of a retrofit grant program through the California Residential Mitigation Program (CRMP), a program established to carry

out mitigation programs to assist California homeowners who wish to seismically retrofit their houses. The first CRMP retrofit incentive program, Earthquake Brace + Bolt (EBB), was launched by the new CEA mitigation department as a pilot project in September 2013. The EBB provides up to \$3,000 to homeowners who complete a qualifying retrofit of their houses. EBB has provided grants for over 16,000 retrofits and has additional federal grant funding to significantly increase that number. Ms. Maffei will outline: the expensive and disruptive earthquake risks to California houses; creative solutions developed by seismic engineers; and how California public policy is implementing those solutions through leadership and grants.

## Professional Bio

Janiele Maffei received an M.S. degree (1980) in Civil (Structural) Engineering and A.B. degree (1978) in Architecture, both from the University of California, Berkeley. Ms. Maffei is licensed as both a Civil Engineer and Structural Engineer in California with over 40 years of experience in the design of new buildings, retrofit designs of existing buildings, seismic evaluations, seismic loss estimation studies, design of equipment anchorages, preparation of construction documents, project management, and construction administration. After fifteen years as a project manager and regional office director with Degenkolb Engineers, she opened her own practice where she managed complex design projects involving many disciplines. In 2011, Ms. Maffei joined the California Earthquake Authority (CEA) as its Chief Mitigation Officer. In this capacity, she serves as the Executive Director of the California Residential Mitigation Program and manages the CEA research department.

As Executive Director of the California Residential Retrofit Program, Ms. Maffei has been responsible for developing policies, plans, and incentives for retrofitting wood frame residential construction throughout California intended to mitigate the consequence of a major earthquake in California. She also co-managed, with representatives from the Federal Emergency Management Agency (FEMA), the CEA/FEMA-funded Applied Technology Council (ATC) Project 110, Prestandard for the Seismic Retrofit of Single-Family Wood-Framed Dwellings, now published as FEMA P-1100. For CEA, she managed the 2014 South Napa Earthquake single-family dwelling research project and the CEA/PEER Project, "Quantifying the Performance of Retrofit of Cripple Walls and Sill Anchorage in Single-Family Wood-Frame Buildings" published in 2020.

Her professional leadership positions include: Structural Engineers Association of Northern California (SEAONC), Board of Directors, (1995-1997); SEAONC, President (2019 – 2021); Earthquake Engineering Research Institute (EERI), Northern California Chapter, President (2010-2011); and EERI, Board of Directors, Secretary and Treasurer (2012-2018).

## SUPPLEMENTAL ACTIVITIES

### Research Roundtable

During this activity, four students and one professor whose research is related to earthquake engineering met virtually with Ms. Maffei. The goal of this activity was to introduce Ms. Maffei to the research activities conducted at Virginia Tech and let her meet with some of the graduate students and professors in the department and initiate a conversation between all attendees, including feedback and suggestions. Given the smaller attendance of this session, each participant was able to elaborate on their research work, and in return, learn about the implications of their research to societies impacted by earthquake hazard. Probed by engaging questions by Ms. Maffei, this session concluded swiftly with a sense that more were to be discussed.

### Meet and Greet

During this activity, Ms. Maffei had the opportunity to meet informally as a group with any students who were interested in learning more about her lecture or engineering in practice. A total of 4 students joined the Zoom meeting. Questions relating to the Earthquake Brace and Bolt (EBB), the California Earthquake Authority, work-life balance and plans for the future were discussed.

## RESULTS, FEEDBACK AND LESSONS LEARNED

Overall, the virtual Friedman Family visit was good with an adequate number of attendees for each of the events. Ms. Maffei presented her lecture with utmost engagement and clarity. Her years of knowledge and work in the realm of earthquake sustainability and public policy resulted in an exceptionally educational lecture. All considered, this remote visit may be considered a success, given the number of attendees and follow-up questions garnered throughout the day. For our members, the opportunity to meet and interact with professionals of great caliber, such as that of Ms Maffei, is a humbling and eye-opening experience

#### ACKNOWLEDGEMENTS

The Virginia Tech EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Ms. Maffei 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, Flyer for the event
- Item 2, Photo of meet and greet



# EARTHQUAKE RESILIENCE FOR CALIFORNIA HOMEOWNERS

Blending engineering, financing,  
and policy for public benefit

*Janiele Maffei, Chief Mitigation Officer  
California Earthquake Authority*

FRIEDMAN FAMILY LECTURE  
5:00-6:15PM ET | 3, FEB 2022 (VIA ZOOM)



