FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to Rice University: February 28th, 2023

This report summarizes the visit of **Maria Mohammed** from Structural Focus that took place at Rice University on February 28th, 2023.

ITINERARY OR AGENDA

Monday, February 27th	
6:00 PM - 6:30 PM	Pick-up by EERI officers
7:30 PM - 9:00 PM	Dinner with EERI officers
Tuesday, February 28th	
9:00 AM - 10:00 AM	Coffee and campus tour by EERI officers
10:00 AM - 10:30 AM	Meeting with Prof. Kai Gong
10:30 AM - 11:00 AM	Break
11:00 AM - 11:30 AM	Meeting with Prof. Jamie Padgett
11:30 AM - 12:00 PM	Meeting with Prof. Leonardo Dueñas-Osorio
12:00 PM - 1:30 PM	Lunch with graduate students from EERI-RU
1:30 PM - 2:00 PM	Meeting with Prof. Kalil Erazo
2:00 PM - 2:30 PM	Meeting with students (undergraduate and graduate)
2:30 PM - 3:00 PM	Seminar prep/quiet time
3:00 PM - 4:00 PM	Seminar
4:00 PM - 5:00 PM	Back to hotel or airport

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

The event was organized by:

- Raul Rincon (Chapter President), email: raul.rincon@rice.edu
- Anibal Tafur (Chapter Vice-President), email: tafur@rice.edu
- Kendall Capshaw (Treasurer), email: kcapshaw@rice.edu
- Jamie Padgett (Chapter Faculty Advisor), email: jamie.padgett@rice.edu
- Caroline Leggett (Department Coordinator), email: caroline.legget@rice.edu

VISITING PROFESSIONAL LECTURE OVERVIEW

Ms. Mohammed delivered an engaging and thought-provoking lecture entitled "Preservation of a Historic Façade – Retrofit when Design Falls Outside of Code Provision", which was held as a departmental specialty seminar, cohosted by the Civil and Environmental Engineering Department. The lecture was open to all faculty, graduate students, and undergraduate students and attendance was approximately 15 people. The seminar was dual in-person and virtually delivered via the Zoom Webinar platform and additionally recorded to be made available to interested persons who might not have been able to attend the lecture at the time of its delivery. The formal lecture was followed by an open Q&A block.

Additional information such as the specialty seminar flier and Ms. Mohammed's campus visit agenda are attached at the end of this report.

Lecture Abstract

Environmental and socio-economic benefits of sustainable preservation have become apparent most recently in the restoration of the historic former May Company department store, now renamed the Saban Building: the future home of the Academy Museum of Motion Pictures in Los Angeles. Preservation of this building included seismic strengthening of its structure as well as its historic façade. The potential falling hazard of historic facades is a major component of ensuring adequate life-safety performance when retrofitting historic structures. Such work involves challenges as older façade material properties are often poorly understood, and typical retrofit schemes rarely fit older facade conditions.

The facade retrofit at the May Company building utilized countersunk, helical, friction anchors. Drilled in pilot holes, through the existing limestone panels and backing grout, the anchors secured the panels to the concrete wall. Since helical anchors had not been permitted for this application in Los Angeles, there being no published engineering data for such anchors in limestone, the devices were tested by innovative means to obtain a one-time approval. Test data helped determine the required number of anchors for each panel. The retrofit scheme resulted in the successful preservation of the historic facade in lieu of complete replacement, while mitigating the falling hazard from the damaged limestone panels and reducing the project's carbon footprint and cost.

Professional Bio

Maria Mohammed joined Structural Focus in 2013 after graduating from the University of Southern California with a B.S. in Civil Engineering in 2012 and an M.S. in Structural Engineering in 2013. Maria is a licensed Structural Engineer in California and has extensive experience working on the retrofit and renovation of historic structures and existing buildings, as well as the design of new buildings. She has worked on significant projects at Structural Focus, including Google LA HQ, the John Anson Ford Amphitheatre, CBRE Masonic Temple, and several projects on the Paramount Studios lot, among others.

Maria has been involved with EERI for many years, she has participated in post-earthquake reconnaissance efforts after the 2019 M7.1 earthquake in Searles Valley, CA and was also selected to participate in EERI's class of Housner Fellows in 2020. In addition to her involvement within EERI, Maria is also actively involved in the Structural Engineers Association of California and Structural Engineers Association of Southern California. She has served and continues to serve as the Chair of various committees in both associations and is currently serving on the Board of Directors for SEAOSC. As a student, Maria greatly appreciated and was inspired by the limited opportunities she had to interact with practicing structural engineers; now as a practicing structural engineer, she is participating in programs like the Friedman Family Visiting Professionals with hopes that her story of becoming a structural engineer, and her day-to-day experiences of working as a structural engineer, will inspire the future generation into entering a field that she's very passionate about.

SUPPLEMENTAL ACTIVITES

Meeting with Graduate and Undergraduate Students for Research Discussion

An open-invitation meeting with interested graduate students and undergraduate students from the Civil and Environmental Engineering Department took place before Ms. Mohammed's seminar lecture, in which students benefited from a meet-and-greet opportunity with Ms. Mohammed. Students were able to ask questions broadly related to Ms. Mohammed's professional background, graduate and undergraduate experience, and ongoing engineering and mentorship work. The students were able to gain insight and receive career advice from an accomplished practicing engineer.

Lunch with Faculty and Graduate Students

Prior to Ms. Mohammed's specialty seminar lecture, Ms. Mohammed was invited to lunch in the Rice University faculty dining room by Department Chair and Chapter Faculty Advisor Dr. Jamie Padgett. Also in attendance were six invited graduate students. During this additional session with Ms. Mohammed, the invited students had the opportunity to ask Ms. Mohammed practical questions related to the day-to-day activities of a practicing engineer, as well as hear more about the mentoring work Ms. Mohammed does across her various affiliations. Ms. Mohammed also had the opportunity to discuss research challenges and gain insight into ongoing work in the field from Dr. Padgett during this lunch chat.

RESULTS, FEEDBACK AND LESSONS LEARNED

Ms. Mohammed's presentation was delivered with enthusiasm, professionalism, and technical detail. She is very talented and encourages students to turn their lives around by exploring different avenues. She did a good job highlighting the importance of industry, academia, and the connections between them, from a professional's point of view, necessary to influence society.

We missed the participation of more undergraduate students in this lecture, probably we may have to find better strategies to bring together students from all levels.

ACKNOWLEDGEMENTS

The Rice University EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Ms. Maria Mohammed 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 encouraging students to participate in Ms. Mohammed's lecture.
- Item 2, detailed agenda used to guide Ms. Mohammed visit to Rice University.

EERI RICE

Made possible by the EERI Friedman Family Visiting Professionals Program and hosted by the EERI Student Chapter at

2022-2023 Specialty Seminar

Preservation of a Historic Façade – Retrofit when Design Falls Outside of Code Provision

Maria Mohammed, S.E.
Project Engineer
Structural Focus

February 28th, 2023
3PM – Ryon Lab 201

Abstract: Environmental and socio-economic benefits of sustainable preservation have become apparent most recently in the restoration of the historic former May Company department store, now renamed the Saban Building: the future home of the Academy Museum of Motion Pictures in Los Angeles. Preservation of this building included seismic strengthening of its structure as well as its historic façade. The potential falling hazard of historic facades is a major component of ensuring adequate life-safety performance when retrofitting historic structures. Such work involves challenges as older façade material properties are often poorly understood, and typical retrofit schemes rarely fit older facade conditions.
The facade retrofit at the May Company building utilized countersunk, helical, friction anchors. Drilled in pilot holes, through the existing limestone panels and backing grout, the anchors secured the panels to the concrete wall. Since helical anchors had not been permitted for this application in Los Angeles, there being no published engineering data for such anchors in limestone, the devices were tested by innovative means to obtain a one-time approval. Test data helped determine the required number of anchors for each panel. The retrofit scheme resulted in the successful preservation of the historic facade in lieu of complete replacement, while mitigating the falling hazard from the damaged limestone panels and reducing the project's carbon footprint and cost.

Bio: Maria Mohammed joined Structural Focus in 2013 after graduating from the University of Southern California with a B.S. in Civil Engineering in 2012 and an M.S. in Structural Engineering in 2013. Maria is a licensed Structural Engineer in California and has extensive experience working on the retrofit and renovation of historic structures and existing buildings, as well as the design of new buildings. She has worked on significant projects at Structural Focus, including Google LA HQ, the John Anson Ford Amphitheatre, CBRE Masonic Temple, and several projects on the Paramount Studios lot, among others. Maria has been involved with EERI for many years, she has participated in post-earthquake reconnaissance efforts after the 2019 M7.1 earthquake in Searles Valley, CA and was also selected to participate in EERI's class of Housner Fellows in 2020. In addition to her involvement within EERI, Maria is also actively involved in the Structural Engineers Association of California and Structural Engineers Association of Southern California. She has served and continues to serve as the Chair of various committees in both associations and is currently serving on the Board of Directors for SEAOSC. As a student, Maria greatly appreciated and was inspired by the limited opportunities she had to interact with practicing structural engineers; now as a practicing structural engineer, she is participating in programs like the Friedman Family Visiting Professionals with hopes that her story of becoming a structural engineer, and her day-to-day experiences of working as a structural engineer, will inspire the future generation into entering a field that she's very passionate about.

DIRECTIONS TO CAMPUS

Directions from IAH

From Intercontinental's terminal road, follow signs to US 59 South.

Once on US 59 proceed south approximately 25 miles and exit at Greenbriar.

Turn left under US 59 and follow Greenbriar to the light at Rice Boulevard.

Turn left onto Rice Boulevard. Rice campus entry gates will be on your right.

Turn right into Gate #20 and park in the visitor's parking section of the North Lot.

Use your credit card to enter the lot.

Directions from Hobby

From Hobby's parking area, exit onto Broadway and follow signs to I-45 North.

Take I-45 North approximately 6 miles to US 59 South.

Once on US 59 proceed south approximately 3 miles and exit at Greenbriar. Follow steps 4 and 5 above

RICE

Rice University
Department of Civil & Environmental Engineering
6100 Main Street
Houston, TX 77005

713-348-4949

RICE

Department of Civil & Environmental Engineering

SEMINAR

Preservation of a Historic Façade – Retrofit when Design Falls Outside of Code Provisions

Maria Mohammed

Tuesday, February 28th, 2023
3PM
Ryon Laboratory

FACULTY:

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Monday, February 27th	
6:00PM	Pick up by Kendall Capshaw
7:00 PM	Dinner with EERI officers
Tuesday, February 28th	
9:00 AM	Coffee and Campus Tour with EERI officers
10:00 AM 214 Ryon	Meeting with Kai Gong
10:30 AM 203 Ryon	Break
11:00 AM 208 Ryon	Meeting with Jamie Padgett
11:30 PM 212 Ryon	Meeting with Leonardo Duenas-Osorio
12:00 PM Faculty Club	Lunch with Graduate Students
1:30 PM 216 Ryon	Meeting with Kalil Erazo Cruz
2:00PM 203 Ryon	Meeting with Undergrad and Grad Students
2:30PM 203 Ryon	Seminar Prep/ Break
3:00 PM 201 Ryon	Seminar

LOGISTICS:

FLIGHT: 02/27 Arrival IAH (6:00PM)
02/28 Departure IAH (7:50PM)

HOTEL: Houston Marriott Medical Center
6850 Fannin St, Houston, Tx 77030

PARKING & GENERAL CEE VISIT LOGISTICS: Park in North Visitor's Lot:
Entrance #20 off Rice Blvd OR
Taxi drop/pickup: Access: Entrance #21 from Rice Blvd. At the first stop sign inside the campus take a left. On your right, after the first building take the access road that runs along the west side of Ryon Lab which dead ends into Keck Hall. Both entrances to Ryon and Keck are on your right. Download the campus map here.

Flash drive:
You are welcome to present from a flash drive or Google Document.

Primary Audience: Graduate and post-doctoral students and faculty in Civil & Environmental engineering – please tailor presentation to appeal to interests in both focus areas with 40-45 lecture/15 minutes Q/A.

CONTACT/Cells:
Kendall Capshaw: Cell#

SEMINAR SUPPORT: Caroline Leggett
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