This report summarizes the visit of Dr. Nathan Gould from ABS Consulting, St. Louis, MO, that took place at the Rice University on January 26 and 27, 2017.

ITINERARY OR AGENDA

Provide the itinerary of the visit.

January 26, 2017

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
</tr>
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<tbody>
<tr>
<td>4:00 PM</td>
<td>Student Chapter welcomes Dr. Nathan Gould at the airport</td>
</tr>
<tr>
<td>7:00 PM – 9:00 PM</td>
<td>Dinner with the student chapter officers from this year and next year’s officers</td>
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</tbody>
</table>

January 27, 2017

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM – 9:30 AM</td>
<td>Breakfast with Dr. Jamie Padgett (faculty advisor of the student chapter)</td>
</tr>
<tr>
<td>9:30 AM – 10:30 AM</td>
<td>Tour of Civil department and the Rice design initiative, Oshmann Engineering Design Kitchen (OEDK) with student chapter president</td>
</tr>
<tr>
<td>10:30 AM – 11:15 AM</td>
<td>Informal meeting with undergrad students from Civil, Mechanical and Architecture departments, who are part of the EERI Seismic Design Competition team</td>
</tr>
<tr>
<td>11:15 AM – 12:00 PM</td>
<td>Meeting with Faculty members in the Civil department</td>
</tr>
<tr>
<td>12:00 PM – 1:30 PM</td>
<td>Informal meeting with department graduate students (soon to be graduating) for career guidance over lunch</td>
</tr>
<tr>
<td>2:00 PM – 3:00 PM</td>
<td>Talk on “Multi-hazard design in performance based design” by Dr. Nathan Gould to students, post-docs and faculty in the Civil department</td>
</tr>
<tr>
<td>3:15 PM</td>
<td>Dr. Nathan Gould leaves for the airport</td>
</tr>
</tbody>
</table>

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S): Navya Vishnu, President, EERI-Rice University: nv7@rice.edu

- Roger Paredes, Vice-President, EERI-Rice University: rlp4@rice.edu
- Carl Bernier, Treasurer, EERI-Rice University: cb36@rice.edu
- Sabarethinam Kameshwar, Member (ex-President), EERI-Rice University: sk56@rice.edu
- Majid Ebad Sichari, Member, EERI-Rice University: me15@rice.edu
- Hesam Talebiyan, Member (next year’s officer), EERI-Rice University: ht20@rice.edu

Faculty: Dr. Jamie E. Padgett, Faculty advisor, EERI-Rice University: Jamie.padgett@rice.edu

Staff: Maria Corcuera, Visits & Seminar Coordinator, Civil and Environmental Engineering Department, Rice University: Mariacorcuera@rice.edu
Lecture Abstract

Multi-Hazard design, which incorporates both natural and manmade hazards, has become a popular design requirement for critical structures. While many Owners and various project team members anticipate a relatively easy integration of the respective hazards based on their understanding of the loads generated by the hazards, numerous complexities arise during the actual integration of a multi-hazard design approach into construction documents.

A case study of recently designed emergency communications facility will be reviewed to understand the development of the design criteria and integration of the different conventional and extreme load criteria into a cohesive multi-hazard strategy to provide a higher level of protection for both structural and non-structural elements that are deemed to be critical to the post-event operations of the facility. Specific design features such as enhanced vertical and lateral load paths, and attachments of critical non-structural elements will be examined to illustrate the implementation of a multi-hazard strategy in the actual structure.

Professional Bio

Dr. Nathan Gould, Chief of Technology for the ABS Consulting Advanced Engineering Division, also serves as the General Manager of the St. Louis office of ABS Consulting. He is a practicing structural engineer with over 25 years of experience in the design, construction and rehabilitation of major structures in all regions of the United States. Dr. Gould is active in the utilization of performance based seismic design criteria and methodology for the design of new buildings and the retrofit of existing structures.

Dr. Gould is the author of numerous technical papers including recent articles on Performance Based Seismic Design, Progressive Collapse of Structures, Managing Extreme Wind Losses, and Terrorism Risk. He currently serves on several technical committees and organizations related to seismic analysis and design, including the NEHRP Advisory Committee on Earthquake Hazards reduction. He has been a member of several post-earthquake reconnaissance groups, including teams that investigated damage following the 2010 Haitian and 2011 Christchurch events. Dr. Gould is a licensed Professional and Structural Engineer in several states.
SUPPLEMENTAL ACTIVITIES

Dinner with EERI officers

Dr. Nathan Gould arrived at Houston airport on January 26, 2017. EERI-RU president, Navya Vishnu, and two previous officers, Sabarethinam Kameshwar and Majid Ebad Sichani, received him at the airport. Later that evening, Dr. Gould joined them for dinner at a local restaurant called Cyclone Anaya where he was treated to some ‘Tex-Mex’ cuisine. Current EERI-RU vice-president, Roger Paredes and next year’s officer Hesam Talebiyan also joined for the dinner. The dinner was a casual affair, with some exchange of research backgrounds and interests and Dr. Gould’s reminiscence of his graduate student life.

Dr. Nathan Gould with current and future EERI officers at dinner

Networking session with graduate students and undergraduate students

The networking session with graduate students was done over lunch and the session with undergraduates was over coffee. The lunch session had attendance from a lot of PhD as well as Post-doctoral scholars.

Networking with graduate students over lunch
The students asked Dr. Gould a variety of questions, ranging from challenges in transitioning from academia to industry as well as research opportunities in industry. Dr. Gould also took this opportunity to mention how activities with EERI helped bridge this gap and how much involvement in such professional groups help one’s career. As for the session with undergraduates, Dr. Gould stressed upon them the importance of doing a master’s level degree as soon as possible. This interaction greatly helped the senior undergraduates, who are facing an imminent choice between grad school and job in the industry.

Tour of OEDK

Oshmann Engineering Design Kitchen (OEDK) is an innovative experimental design workshop at Rice University, mainly for the undergraduate students. OEDK showcases various design projects students have undertaken, either as part of a course or out of self-learning interest. OEDK was in fact the design workshop for the Rice University Seismic Design team this year. OEDK has technicians and latest equipment to help our students achieve their dreams. Dr. Nathan Gould, along with Navya Vishnu, took a tour of the OEDK facility and the OEDK staff impressed upon him the importance of such a platform for students’ growth outside classrooms.

RESULTS, FEEDBACK AND LESSONS LEARNED

It was a great learning experience to coordinate, plan and execute a professional visit to Rice University. The EERI website was very helpful in planning Dr. Nathan Gould’s visit. Also, help from former EERI-RU officers, who have hosted EERI speakers in previous years, was indispensable. One of the biggest challenges during the visit was over-scheduling Dr. Gould’s visit. With the talk, student and faculty meetings, the day was a bit hectic for Dr. Gould. Next year, we can plan to merge the graduate and undergraduate networking sessions, so that the professional is not repeating his talk and advice. If possible, next year, a poster session highlighting graduate research at Rice University can be carried out.

ACKNOWLEDGEMENTS

The Rice University EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Dr. Nathan Gould through their Friedman Family Visiting Professional Program endowment.

The student chapter also thanks the funding support from the Student Activities President’s Programming (SAPP) fund at Rice University and the Civil and Environmental Engineering Department.

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:

- Flier advertising the seminar
- The official agenda sent to Dr. Nathan Gould
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

SEMINAR

Enhanced Seismic Design Integrated Into A Multi-Hazard Design Approach

Nathan C. Gould, D.Sc., P.E., S.E.
Chief of Technology, Advanced Engineering
ABS Consulting
St. Louis, MO

Friday, January 27, 2017
2:00 PM - Ryon Lab 201

Summary: Multi-Hazard design, which incorporates both natural and manmade hazards, has become a popular design requirement for critical structures. While many Owners and various project team members anticipate a relatively easy integration of the respective hazards based on their understanding of the loads generated by the hazards, numerous complexities arise during the actual integration of a multi-hazard design approach into construction documents.

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Directions to Rice University
Civil & Environmental Engineering
4100 Main Street
Houston, TX 77005

Directions from IAH
From Interstate 95’s terminal road, follow signs to US 59 South.

Once on US 59, proceed south approximately 5 miles and exit to Gessner Road.

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

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

Turn right into Gene #20 and park in the center’s parking section of the North Lot.

Use your credit card to enter the lot.

You must have the event coordinator’s name on the event’s parking list.

Directions from Hobby
From Hobby’s parking area, use exit

Proceed north to 1451 North.

Take I-45 North approximately 8 miles to 125 South.

Once on US 59 proceed north approximately 5 miles and exit at Gessner Road. Follow signs 4 and 5 North.

Department of Civil & Environmental Engineering
Rice University
Department of Civil & Environmental Engineering
4100 Main Street
Houston, TX 77005
713.348.4940

SEMINAR
Enhanced Seismic Design
Integrated Into
A Multi-Hazard Design Approach

Nathan C. Gould
Chief of Technology, Advanced Engineering
ABS Consulting
St. Louis, MO

Friday, January 27, 2017
2:00 PM
Ryon Lab 201

LOGISTICS

FLIGHT: Southwest Airlines - HOU/HUR
Arriving: 1/27/17 @ 4:00 p.m. flight 657
Departing: 1/27/17 @ 4:45 p.m. flight 4151

TRANSPORTATION:
Guests will be picked up at the airport.

HOTEL:
Confirmation # 9256162
Hilton Houston Plaza Medical Center
6635 Travis Street, Houston, TX 77030
T: 1-713-538-6000
Arriving: January 26, 2017
Departing: January 27, 2017

PARKING & GENERAL CEE VISIT
LOGISTICS:
Text drop-off/pick-up. Use entrance #11 off Rice Blvd. At the first stop sign inside the campus take a left. On your right, after the first building take the second road that runs along the west side of Ryon Lab and dead ends into Rock Hall. Display the campus map here.

AV:
You are welcome to present from a flash drive or bring your laptop, whichever you prefer. MAC users, please bring your AV dongle with you.

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 minute lecture (15 minutes Q&A).

CONTACT:
Phone
Email
Email
Email

SEMINAR SUPPORT:
Maria Corevita
O: (713) 348-6161
C: (281) 784-0402
Email: mcorevita@rice.edu

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00 p.m.</td>
<td>Receiving at Hobby airport by EERI Officers</td>
</tr>
<tr>
<td>5:30 p.m.</td>
<td>Check-in at Hotel</td>
</tr>
<tr>
<td>6:30 p.m.</td>
<td>Dinner with EERI student chapter</td>
</tr>
<tr>
<td>Friday, January 27</td>
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<tr>
<td>9:30 a.m.</td>
<td>TBA Breakfast with Dr. Jamie Pedgrett</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>Campus tour with Naya Davis</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>OEDK Tour</td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td>Undergraduate SDC team meeting over coffee</td>
</tr>
<tr>
<td>2:13 Ryon Lab</td>
<td>Meeting with Dr. Satish Nagrajala</td>
</tr>
<tr>
<td>11:30 a.m.</td>
<td>Meeting with Dr. Ilona Stanisula</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Lunch interaction with graduate students</td>
</tr>
<tr>
<td>1:45 p.m.</td>
<td>Set up in room for lecture</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>SEMINAR</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>LEAVING RYON LAB</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>LEAVING RYON LAB</td>
</tr>
</tbody>
</table>

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