

# FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM



## Visit to Purdue University: April 16, 2019

This report summarizes the visit of **Annie Kammerer** from Annie Kammerer Consulting that took place at Purdue University on April 16, 2019.

### ITINERARY OR AGENDA

TIME:	ACTIVITY:
10:00AM - Noon	Tour of the Bowen Laboratory
Noon - 1:30PM	Lunch at Bistro 501 with graduate students
1:30PM - 2:30PM	Tour of Purdue University's main campus
2:30PM - 3:30PM	Meeting with Purdue EERI Chapter (open discussion)
3:30PM - 4:30PM	Open time for Dr. Kammerer
4:30PM - 5:30PM	Presentation by Dr. Kammerer to the Structural Engineering Graduate Student Seminar Class
6:00PM	Dinner with several Structural Engineering Professors

### STUDENT CHAPTER VISIT PLANNING COMMITTEE

**LEAD ORGANIZER(S):** Jonathan Monical, President (jmonica@purdue.edu) and Ryan Whelchel, Seminar Coordinator (rwhelch@purdue.edu)

- Ayhan Irfanoglu, PhD, Civil Engineering Faculty, ayhan@purdue.edu

### VISITING PROFESSIONAL LECTURE OVERVIEW

Dr. Kammerer's presentation followed the abstract below. The presentation was well attended by structural engineering students and faculty.

#### Lecture Abstract

Since the beginning of the nuclear power industry, the framework and methods used in the seismic design and risk evaluation of the fleet of nuclear power plants in the US has gone through significant change and advancement. This presentation—targeted to the technically inclined layperson—covered a wide variety of topics including:

- Basic nuclear plant design concepts (how they work and what can go wrong)
- Why the engineering of nuclear plants is unique and challenging
- Brief history of seismic regulations, design approaches, and reevaluation efforts
- The performance-based and risk-informed methods used in the industry today,
- The impact of the Fukushima Daiichi accident, including current and future NRC efforts
- The NRC, IAEA, and the new global nuclear picture

## Professional Bio

Dr. Annie Kammerer is owner of Annie Kammerer Consulting, a firm specializing in seismic hazard and risk consulting for the nuclear energy sector. She is also the executive director of the Consortium of Organizations of Strong Motion Observation Systems (COSMOS), an applied research organization out of at UC Berkeley.

Her work is principally focused on analysis and regulatory processes associated with probabilistic seismic and tsunami hazard and risk assessments for nuclear plants and other critical facilities.

Prior to starting her own firm, she was Principal Seismologist for the Bechtel Corporation in San Francisco. Prior to that, she spent 7 years at the US Nuclear Regulatory Commission, where she coordinated the NRC Seismic Research Program. At the NRC, she developed the current US guidance on performing seismic hazard assessments and seismic margin analysis for nuclear facilities. Starting in 2011, Dr. Kammerer was a member of the NRC's seismic technical team developing post-Fukushima response and re-evaluation guidance. From 2012 to 2013, she was also the NRC's technical lead for a special program conducting Seismic Walkdowns of all 104 operating US nuclear plants in response to the Fukushima Daiichi accident. Dr. Kammerer is active internationally and has chaired IAEA Working Groups on seismic re-evaluation of operating reactors, tsunami, and seismic isolation.

She holds three degrees from UC Berkeley, including a PhD in geotechnical engineering with minors in strong motion seismology and structural engineering.

Visit [www.anniekammerer.com](http://www.anniekammerer.com) for more information

## SUPPLEMENTAL ACTIVITIES

### Bowen Laboratory Tour

The Bowen Laboratory is a large-scale structural engineering research laboratory. Dr. Kammerer and Ryan Whelchel were the only attendees. Large tour groups represent safety hazards that are best mitigated by using a single tour guide (Ryan). The lab tour covered nearly all aspects of the laboratory including the research capabilities of the laboratory, a summary of on-going research projects, and faculty and graduate student work areas.

### Purdue EERI Chapter Open Discussion

Annie described her journey from enrolling in a community college in San Francisco to finishing her PhD at Berkeley. Her focus, work ethic and courage allowed her to embrace the opportunities that came her way, including coding a healthcare model for a law firm where she was working. A few years later, Annie received an NSF scholarship to fund her geotechnical research for her thesis at Berkeley. Annie also briefly talked about her role in the Nuclear Regulatory Commission and how reading and revising nuclear policy became a forte for her. Purdue EERI chapter members attended this event.

## RESULTS, FEEDBACK AND LESSONS LEARNED

The biggest challenge was scheduling a time when Dr. Kammerer could visit both Purdue University and University of Illinois. As the two EERI chapters worked together to apply for a spot in the lecture series, both chapters worked together to find a time when Dr. Kammerer could visit. Unfortunately, due to scheduling conflicts, a time that fit the bill was not available. Fortunately, Dr. Kammerer was able to find time and resources to visit the two universities on separate weeks.

For future visits, the chapter will focus on the following goals to improve the scheduling process:

- Request speaker information earlier in the academic year. More lead time would have prevented the scheduling conflicts encountered by both EERI Chapters.
- Set a deadline of the end of January to have the visit date scheduled.

To improve the lecturer experience, the following goals have been made:

- Involve a few more students on the planning committee to cast a larger net for activity ideas
- Continue using laboratory and campus tours as a part of the visit activities. The tours provide an easy medium for discussion between students and the lecturer in addition to giving the lecturer insight into world class academic institutions.

## ACKNOWLEDGEMENTS

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