

2018-2019 ANNUAL REPORT

State University of New York at Buffalo Student Chapter

of the Earthquake Engineering Research Institute



Report Date: October 21, 2019

This report summarizes the membership and activities conducted by the Student Chapter of the Earthquake Engineering Research Institute at the University at Buffalo (abbreviated as UB-EERI Student Chapter) during the 2018-2019 academic year.

MISSION & GOALS

The mission of UB-EERI Student Chapter is to build a community of students and professionals. Social activities are supported among the student chapter, bringing together students with similar career objectives and interests and thus allowing a space for lifelong friendships to form. Networking events with engineering professionals can also bridge the gap between the UB-EERI Student Chapter and the greater EERI community. Our goals include reaching out, beyond the research lab and classroom, to give back to our local community. Finally, direct volunteer efforts that specifically use our talents as engineers, in addition to fundraising efforts, are undertaken to positively affect the community.

AFFILIATION

The UB-EERI Student Chapter is headquartered at the Department of Civil, Structural, and Environmental Engineering (CSEE) at the University at Buffalo. The parent organization of the UB-EERI Student Chapter is the Earthquake Engineering Research Institute. The UB-EERI club mentors the UB Seismic Design Competition Team (SDCT). This student chapter is also recognized as a Special Interest Club by the Graduate Student Association (GSA) of University at Buffalo.

CONTACT ADDRESSES

Primary Address:

UB-EERI Student Chapter
212 Ketter Hall
Department of Civil, Structural and Environmental Engineering
University at Buffalo
Buffalo, NY 14260-4300, USA

Secondary Address:

UB-EERI Student Chapter
310 Student Union
Box 602100
Buffalo, NY 14260-2100, USA

WEBSITE

The website of UB-EERI Student Chapter presents abstracts, pictures, additional links and materials regarding our activities. Please visit the website to learn more about each of the 2018-2019 Earthquake Engineering Research Institute activities listed in this report.

The link to UB-EERI Student Chapter's webpage is: <http://gsa.buffalo.edu/eeri/>

MEMBERSHIP

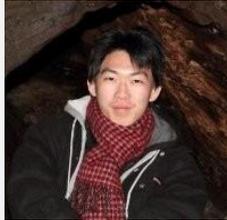
The UB-EERI Student Chapter had a total of 10 official members in 2018-2019.

OFFICERS

The Board consisted of the following members:



Fernando Szasdi
President



Kah Teong Soh
Vice President



Michael Murphy
Treasurer



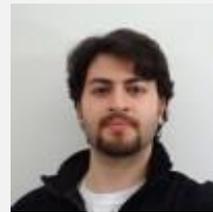
Prashant Shekhar
Secretary



Christian Chacon
Senator, Webmaster



Rahul Raman
Senator



Mohammad Syed
Senator



Virgilio Dominguez
Senator



Damian Andreani
Senator



Claudia Murillo
Senator

FACULTY ADVISER

Andreas Stavridis, PhD

Assistant Professor
Department of Civil, Structural and Environmental Engineering
University at Buffalo, State University of New York
224 Ketter Hall
Buffalo, NY 14260
astavrid@buffalo.edu



MEMBERS

A complete list of members is shown members:

Role	Name	EERI Member Number	Email	Student Status
President	Fernando Szasdi	19587	fszasdib@buffalo.edu	Graduate
Vice President	Kah Teong Soh	19711	kahteongs@buffalo.edu	Graduate
Treasurer	Michael Murphy	30720	murphy67@buffalo.edu	Graduate
Secretary	Preshant Shekhar	19592	preshantshe@buffalo.edu	Graduate
Webmaster	Mi Jin Jung	19712	mijinjun@buffalo.edu	Graduate
Webmaster	Christian Chacon	19714	cchaconf@buffalo.edu	Graduate
Senator	Damian Andreani	17448	damianan@buffalo.edu	Graduate
Senator	Virgilio Dominguez	29907	vdomingu@buffalo.edu	Graduate
Senator	Rahul Raman	19773	rraman2@buffalo.edu	Graduate
Senator	Claudia Murillo	19763	cmurillo@buffalo.edu	Graduate
Senator	Mohammad Syed	30154	s54@buffalo.edu	Graduate
Member	Mustafa Kesti	11272	mkesti@buffalo.edu	Graduate
Member	Joseph Colletti	18301	jacollet@buffalo.edu	Graduate
Member	Siddarth Parida	29919	sparida@buffalo.edu	Graduate
SDCT	Paolo Bourdeau	19220	paolobou@buffalo.edu	Undergraduate
SDCT	Hannah Bocker	30320	hbocker@buffalo.edu	Undergraduate
SDCT	Autumn Bender	30322	abender3@buffalo.edu	Undergraduate
SDCT	Brayden Hawkins	30329	braydenh@buffalo.edu	Undergraduate
SDCT	John Murphy	20374	jbm29@buffalo.edu	Undergraduate
SDCT	Long Nguyen	30338	nguyen27@buffalo.edu	Undergraduate
SDCT	Jonathan Kestelman	30341	jkestelman@buffalo.edu	Undergraduate
Faculty Adviser	Dr. Andreas Stavridis	09914	astavrid@buffalo.edu	

BUDGET & FINANCIALS

The budgetary details of the UB-EERI Student Chapter are presented below for the 2018-2019 academic year.

Sponsor / Event	Amount (USD)
UB GSA	+473.90
UB CSEE	+586.06
UB CSEE GSA	+0.0
Campfire Night (October 26, 2018)	-111.98
Last UB EERI Fall Meeting (December 6, 2018)	-151.92
Depew Middle School Science Fair	-150.00
Friedman Family Visit (March 29, 2019)	-231.06
UB-EERI Symposium (April 5, 2019)	-414.00
Final 2018-2019 Balance:	\$0

CHAPTER ACTIVITIES

INTRODUCTORY MEETING

A meeting was held on August 31, 2018 to introduce the mission and goals of the UB-EERI Student Chapter to the new members. Students across various departments of the university were invited for this meeting. The club officers for the year 2017-2018 introduced themselves to the new members. An initial plan of the events to be organized throughout the year was also discussed.

REGULAR CHAPTER MEETINGS

The officers of the UB-EERI Student Chapter met weekly to discuss and plan events throughout the semester as well as discuss current earthquake engineering research and design. The details of the various major events organized by UB-EERI Student Chapter during the academic year 2018-2019 are presented next in chronological order.

CAMPFIRE NIGHT

UB-EERI Student Chapter organized a Campfire Night on Friday October 26, 2018. The event took place from 7:30 p.m. to 10:00 p.m. in the Lake LaSalle Fire Pit, located at UB's North Campus. The objective of the activity was to offer the members of the chapter an opportunity to discuss current earthquake engineering topics while enjoying the Fall's weather in the outdoor.

LAST UB EERI FALL MEETING

The last UB EERI meeting of the 2018 Fall semester was held on December 6, 2018. At this meeting, pizza was served while the Student Chapter members reviewed the semester activities and discussed an early list of the proposed activities for the 2019 Spring Semester.

DEPEW MIDDLE SCHOOL SCIENCE FAIR

On March 21, 2019, the UB-EERI Student Chapter traveled to the Depew School District High School to engage with young students to get them interested in careers in STEM fields. The Science Fair last from 6:00 pm to 9:00 pm and young students were able to build miniature structures out of straws and pipe cleaners, in order to shake them on the chapter's home built shake table.

FRIEDMAN FAMILY VISITING PROFESSIONAL VISIT

On March 29, 2019, UB-EERI was fortunate to be awarded a visit, due to the generosity of the Friedman Family, by Mr. James Malley, S.E., a Senior Principal Engineer at Degenkolb Engineers in San Francisco, California.

Events, on the day of the visit, included meetings with the UB Undergraduate Seismic Design Team and with Dr. Joseph Atkinson (Department Chair), breakfast, tours of the UB Structural Engineering and Earthquake Simulation Laboratory (SEESL), a keynote presentation by Mr. Malley, titled "Use of PEER Tall Building Initiative Guidelines for Peer Review of Tall and Unique Structures" and lunch. Additionally, Mr. Malley was gracious in extending his time to host a Resume Critique, for students to brush up their resumes, interview skills and learn about the current state of the civil-engineering hiring market.

Please see the Attachments section at the end of this document for supplemental information. Please refer to the Friedman Family Report submitted to EERI from UB on May 2019 for supplemental information.

THIRD UB-EERI SYMPOSIUM

On April 5, 2019, the UB-EERI Student Chapter hosted its Third Earthquake Engineering Symposium. We were extremely lucky to have Colorado State University Harold H. Short Endowed Chair Professor John Van De Lindt, PhD as our keynote speaker.

The symposium included breakfast, a student research presentation competition, tours of the UB SEESL, a meeting of CSEE graduate students with Dr. Van De Lindt, lunch, and the keynote lecture by Dr. Van De Lindt on the topic of "Quantitative Modeling of Community Resilience to Natural Hazards".

The student research presentation competition was judged by the votes of faculty and students, and the top three prizes were 250, 150 and 50 USD. The event was co-sponsored by the UB Department of Civil Structural and Environmental Engineering and primarily the UB GSA. Here we would like to publicly thank these co-sponsors.

The goal of this symposium was to provide students, professors, researchers, practicing engineers and other professionals an opportunity to exchange ideas, experience and goals in the field of earthquake engineering and impact mitigation. UB and the UB-EERI Student Chapter were well equipped to host such an event. Plans for the 2020 Symposium are in the works.

Please see the Attachments section at the end of this document for other supplemental information.

SEISMIC DESIGN COMPETITION TEAM

The SDCT at UB is doing well. With the ASCE club at UB there is a strong membership and there is a lot of interest, at the undergraduate level, in seismic civil engineering.

The UB SDCT meets regularly to discuss EERI topics as well as prepare for the flagship competition event.

SDCT Members

A complete list of members is shown below.

Name	EERI Member Number	Email	Role
Paolo Bourdeau	19220	paolobou@buffalo.edu	Project Manager
Hannah Bocker	30320	hbocker@buffalo.edu	Member
Autumn Bender	30322	abender3@buffalo.edu	Member
Brayden Hawkins	30329	braydenh@buffalo.edu	Member
John Murphy	20374	jbm29@buffalo.edu	Project Manager
Long Nguyen	30338	nguyen27@buffalo.edu	Member
Jonathan Kestelman	30341	jkestelman@buffalo.edu	Member

Team results and lessons learned

This year's competition included various challenging changes to the traditional rules of the EERI Seismic Design Competition, including a unique design constraint where we had to build within a T shaped footprint. We brainstormed multiple designs as a group and were sure to include the ideas of underclassmen.

Although the tower collapsed during the second ground motion, The UB Seismic Design Team proudly placed 4th overall in our acceleration and displacement predictions for ground motion 1. The team also scored well in architecture and communication.

Our architecture score is what put us over the top and we learned the value of having an aesthetically pleasing design. Architecture is an area that the team will continue to improve for next year.

ELECTION

On August 31, 2018 at 1:00 PM in 140 Ketter Hall the 2018-2019 UB-EERI Elections were held. At this election meeting, people interested in EERI membership were able to learn about the club, vote and obtain student-membership applications. Pizza and light refreshments were served at the election.

FEEDBACK FOR EERI

Based on the feedback provided in the previous year report, we notice that the webpage has been updated and the student chapter is glad that their feedback was implemented.

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:

- Page 9 Photo of Campfire Night
- Page 10 Campfire Night Flyer
- Page 11 Photos of Depew Middle School Science Fair
- Pages 12 Photos of Friedman Family Visit
- Page 13 Friedman Family Visit Flyer
- Pages 14-16 Photos of 2018 UB-EERI Symposium
- Page 17 Results of Symposium competition
- Page 18 Symposium Flyer

CAMPFIRE NIGHT ATTACHMENTS



UB-EERI members present in the Campfire Night.

UB-EERI Campfire 2018

UB-EERI is organizing a Campfire Night on Friday, October 26.

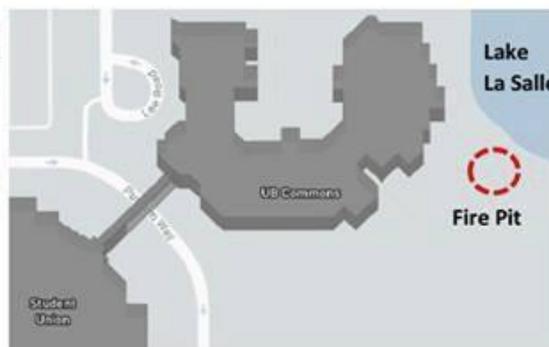
Please join us for a fun night! We'll have marshmallows, graham crackers, chocolates and everything else to make smores. Feel free to bring guitars and other instruments, as we get together to celebrate the Fall!



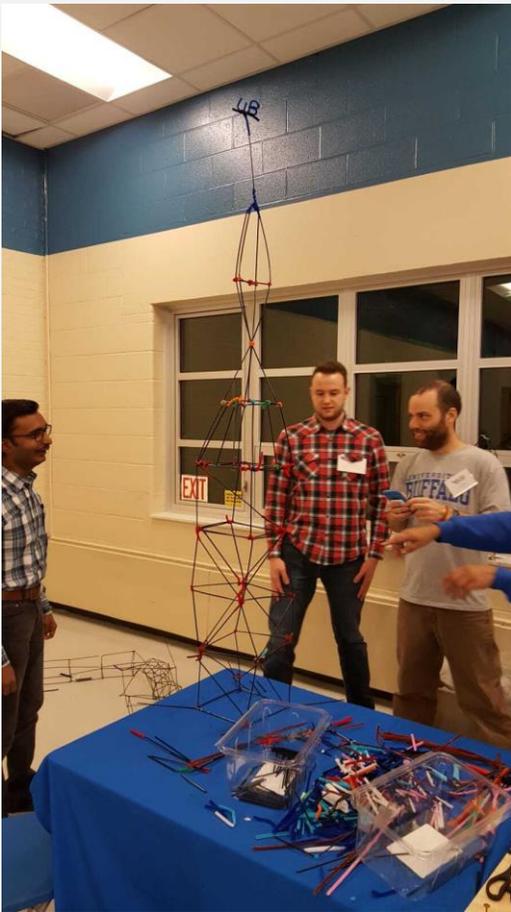
The event will take place from 7:30 p.m. to 10:00 p.m. in Lake LaSalle's Fire Pit, located behind the Commons near the boat launch.



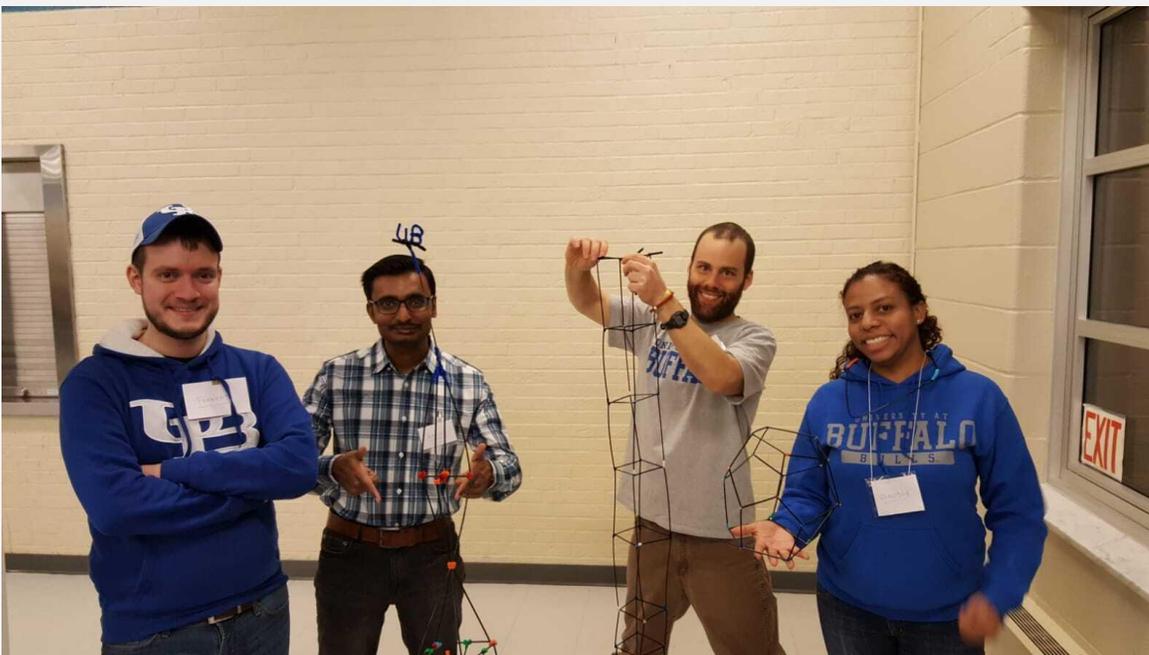
See you at the Campfire!



DEPEW MIDDLE SCHOOL SCIENCE FAIR



UB-EERI members present in the Depew Middle School Science Fair.



UB-EERI members group photo



Mr. Malley delivering the Keynote Presentation.

Use of PEER Tall Buildings Initiative Guidelines for Peer Review of Tall and Unique Structures

James O. Malley
Senior Principal, Degenkolb Engineers

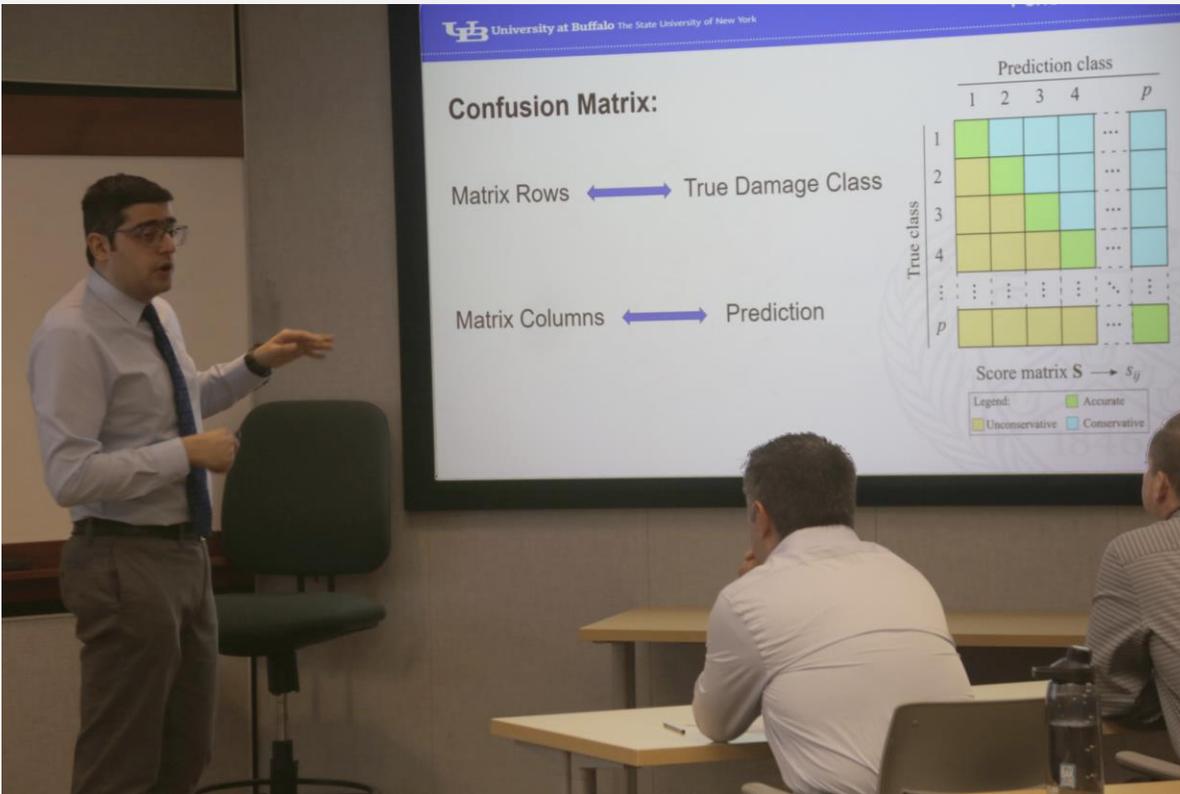
Abstract

Engineers designing tall and otherwise unique structures are challenged in strictly meeting all seismic design provisions of the building code. Prior to 2010, there were no guidelines in place to allow engineers to perform a performance based seismic design to validate that their designs were consistent with the performance goals of the code. In 2010, the PEER Tall Buildings Initiative published the first edition of the “Guidelines for Performance-Based Seismic Design of Tall Buildings. The 2nd edition of the Guidelines was published in 2017. Since their publication the PEER Guidelines have been used to facilitate the peer review and approval of dozens of tall and unique structures in many major West Coast cities. This presentation will summarize some of the key elements of the Guidelines and discuss their application on a number of interesting peer review projects.

Short Bio

James O. Malley, S.E., is a Senior Principal with Degenkolb Engineers. He received both his Bachelors and Masters Degrees from the University of California at Berkeley. Mr. Malley has over 35 years of experience in the seismic design, evaluation and rehabilitation of building structures. He was responsible for the analytical and testing investigations performed as part of the SAC Steel Project in response to the Northridge earthquake damage. In 2000, AISC presented Mr. Malley its’ Special Achievement Award. Mr. Malley is Chair of the AISC Specifications Committee and the Past-Chair of the AISC Seismic Subcommittee. He was named the 2010 T.R. Higgins Lectureship Award winner for his work on the AISC Seismic Provisions, and in 2012 was given presented with a Lifetime Achievement Award by AISC. Mr. Malley is also a member of the AWS Subcommittee on Seismic Welding Issues. Mr. Malley was also one of the authors of the PEER Tall Buildings Institute “Guidelines for the Performance-Based Seismic Design of Tall Buildings” and is involved in the peer review of numerous tall building projects in areas of high seismic risk. Jim has served as a member of the SEAONC and SEAOC Board of Directors, and was President of SEAONC in 2000-2001 and SEAOC in 2003-2004. He was named a SEAOC Fellow in 2007 and an Honorary Member of SEAONC in 2014. He also was a member of the Board of Directors of NCSEA, serving as President in 2010-1011. Mr. Malley also served as a member of the Board of Directors of EERI and is presently on the Board of the Applied Technology Council.

Date: Friday, March 29th, 2019 Time: 11.00 am
Location: 140 Ketter Hall, North Campus, University at Buffalo



Student Research Competition presentation.



UB-EERI Fernando Szasdi, 1st Place Presenter Alexandros Nikellos, Keynote Speaker Dr. John Van De Lindt, and Dr. Andreas Stavridis, after the competition.



Visit to the University at Buffalo's (UB) Structural Engineering and Earthquake Simulation Laboratory (SEESL).



Dr. John Van De Lindt imparting the keynote presentation of the Symposium.



Keynote Speaker Dr. John Van De Lindt interacted with students and faculty during the coffee break.

Award	Participant
1st Place	Alexandros Nikellis
2nd Place	Sina Basereh
3rd Place	Amir Sarreshtehdari

Results of Symposium competition.

Quantitative Modeling of Community Resilience to Natural Hazards

Professor John W. van de Lindt
Colorado State University

Abstract

This presentation will begin in earthquake engineering with whole building tests of resilient and non-resilient apartment buildings. Resilient buildings are a necessary but not necessarily sufficient condition to achieve urban resilience to earthquakes. Then we'll take a journey beyond buildings – to water and power networks that those buildings depend on to function – and then to the people and families who depend on all of our infrastructure to remain functional. Social and economic institutions within a community rely on a functional physical infrastructure and everything we need to function is interdependent. Together, we'll discuss all of these interacting in a fundamental form for earthquakes, tornadoes, and floods, and discuss where the scope of a new modeling environment – the Interdependent Networked COmmunity Resilience Modeling Environment (IN-CORE) will be when it is released as the main product of the NIST-funded Center of Excellence for Risk-Based Community Resilience Planning. IN-CORE will be an open source platform released on December 31, 2019, with the goal of enabling any researcher to import and code their own algorithms and study community resilience in an interactive work environment.

Short Bio

Dr. John W. van de Lindt is the Harold H. Short Endowed Chair Professor in the Department of Civil and Environmental Engineering at Colorado State University. Over the last two decades Dr. van de Lindt's research program has sought to improve the built environment by making structures and structural systems perform to the level expected by their occupants, government, and the public. This has been primarily through the development of performance-based engineering and test bed applications of building systems for earthquakes, hurricanes, tsunamis, tornadoes and floods. His work includes both the development of new nonlinear numerical models and a large number of experimental investigations to calibrate those models and support hypotheses. Van de Lindt led both the NEESWood and NEES-Soft project teams between 2005-2013 which consisted of two-story, four-story, and six-story shake table tests on the world's largest shake tables, was a past Chair of the ASCE Committees on Wood, and now serves as vice chair of ASCE's Executive Committee for the Infrastructure Resilience Division. Professor van de Lindt current serves as the Co-director for the National Institute of Standards and Technology-funded Center of Excellence (COE) for Risk-Based Community Resilience Planning headquartered at Colorado State University. The NIST COE is a 12-university collaboration and seeks to develop the computation environment needed to enable quantification of community resiliency to natural hazards. He has published more than 400 technical articles and reports including more than 180 journal papers.

Date: Friday, April 5th, 2019 Time: 2.00 pm
Location: 140 Ketter Hall, North Campus, University at Buffalo