

2018-2019 ANNUAL REPORT

University of Michigan Student Chapter of the Earthquake Engineering Research Institute

Report Date: April 29, 2019



This report summarizes the membership and activities conducted by the University of Michigan Student Chapter of the Earthquake Engineering Research Institute during the 2018-2019 academic year.

MISSION & GOALS

The primary purposes of EERI at the University of Michigan are the following: (1) to educate students about earthquake hazards through guest speakers and access to resources maintained by the student chapter, (2) to provide an opportunity for students interested in earthquake hazard reduction to meet and exchange ideas. The goal of the EERI University of Michigan Student Chapter is to help students improve their understanding of the impact of earthquake in multidisciplinary aspects and advance their knowledge in the science and the practice of earthquake engineering in mitigating earthquake risk.

MEMBERSHIP

The University of Michigan Student Chapter had a total of 11 members in 2018-2019.

OFFICERS

The Board consisted of the following members:

Role	Name	EERI Member Number	Email	Student Status
President	Arthriya Suksuwan	29903	arthriya@umich.edu	Graduate student
Vice President	Ahmed Abdelhady	29901	auhady@umich.edu	Graduate student
Secretary	Monica Jambu	29898	monicaja@umich.edu	Graduate student

Board meetings were held as needed for chapter events.

FACULTY & INDUSTRY ADVISORS

Seymour M.J. Spence, PhD, Assistant Professor, Department of Civil and Environmental Engineering, University of Michigan. smjs@umich.edu

MEMBERS

A complete list of members is shown below.

Name	EERI Member Number	Email	Student Status
Arthriya Suksuwan	29903	arthriya@umich.edu	Graduate student
Ahmed Abdelhady	29901	auhady@umich.edu	Graduate student

Monica Jambu	29898	monicaja@umich.edu	Graduate student
Malcolm Ammons	18394	ammonsm@umich.edu	Graduate student
Nina Zabihi	19795	ninazbh@umich.edu	Graduate student
Christian Anthony	19884	florcarr@umich.edu	Graduate student
Tung-Yu Wu	20262	tungyuwu@umich.edu	Graduate student
Stephanie Chausow	30064	schausow@umich.edu	Undergraduate student
Ella Yazbeck	30213	yazella.umich.edu	Undergraduate student
Jia Yu	30381	wanzeyu@umich.edu	Undergraduate student
Leah Dixon	30063	lcdixon@umich.edu	Undergraduate student

BUDGET & FINANCIALS

The EERI Student Chapter at the University of Michigan has an account set up through the university, with a current balance of \$324. Chapter funds were used to support the undergraduate seismic design team (\$500 was funded for team registration, and \$2400 was used to fund student travel and lodging at the 2019 EERI Annual Meeting by the university).

CHAPTER ACTIVITIES

REGULAR CHAPTER MEETINGS

A general meeting and recruitment event for the EERI Student Chapter was held on September 13, 2018, with an attendance of 14 graduate and undergraduate students. The benefits of membership in EERI, the undergraduate SDC, and general chapter goals (speakers and outreach) were discussed. A meeting was held on October 26, 2018, to form undergraduate SDC team and to register the participants. The meeting attendance was seven people. Smaller meetings were held as necessary in preparation for chapter events.

EERI SEMINAR WITH DR. EVGUENI FILIPOV

Our first speaker was Dr. Evgueni Filipov, assistant professor of Civil Engineering at the University of Michigan, presenting a topic entitled "An introduction to earthquake engineering, dynamic analysis, and how to get involved in the seismic design competition". Dr. Filipov shared his experience being a president of EERI Student Chapter when he was at the University of Illinois at Urbana-Champaign as well as his experience joining the EERI Student Leadership Council.

EERI DISTINGUISHED LECTURE BY DR. REGINALD DESROCHES

On January 11, 2019, the EERI Student Chapter hosted the 2019 EERI distinguished lecture with Dr. Reginald Desroches, Dean of the George R. Brown School of Engineering at Rice University. Dr. Reginald presented a lecture entitled "The promise of smart materials in earthquake resistant design". The presentation highlighted applications of one class of smart materials, shape memory alloys, in improving the performance of structures subject to earthquake loading.

FRIEDMAN FAMILY VISITING PROFESSIONAL

Ivan Wong's presentation was entitled "Learning from Earthquakes: Implications for Seismic Hazard and Seismic Design in the U.S." on April 17, 2019. A brief introduction to the seismic hazard and seismic risk was presented. Various case studies on major earthquakes around the world were discussed regarding lessons learned from each earthquake and how these lessons impacted the design concepts and methodologies. Seismic hazard

and risk in the New Madrid seismic zone was also discussed. The lecture was attended by students and faculty in geotechnical engineering and structural engineering programs at the University of Michigan, many of whom are members of the EERI student chapter. The audience response was positive. Many interesting questions were raised and they were well addressed by Ivan.

Local Outreach

EERI members also participated in community outreach programs with Dr. Jason McCormick at a local elementary school to promote engineering to second-grade students. The members visited Bates Elementary in Dexter to teach second-graders about bridges and allow them to experiment with a computer program to build and test their own bridges. The group also hosted a similar bridge activity for 5-8th graders in the annual M-Connex Xplore Engineering Summer Camp last summer.



Building bridge activity at Bates Elementary and M-Connex Xplore Engineering Summer Camp

SEISMIC DESIGN COMPETITION TEAM

The University of Michigan's Seismic Design Team was excited to participate at this year's international competition for the first time in more than five years. The undergraduate students on this small team got to work together to design an earthquake resistant building for the 2019 Seismic Design Competition in Vancouver, Canada. We starting by learning how to design in SAP2000 and then turned our design into a physical model for the competition.

SDC Team Members

A complete list of members is shown below.

Name	EERI Member Number	Email	Role
Stephanie Chausow	30064	schausow@umich.edu	Team Captain
Ella Yazbeck	30213	yazella.umich.edu	Undergraduate member

Jia Yu	30381	wanzeyu@umich.edu	Undergraduate member
Leah Dixon	30063	lcdixon@umich.edu	Undergraduate member
Loren Mata	N/A	matala@umich.edu	Undergraduate member
Michael Mata	N/A	mimata@umich.edu	Undergraduate member

SDC Team Financial Sponsors

A list of financial sponsors for the SDC team.

Name	Email	Amount
University of Michigan	soas@umich.edu	\$2900

Team results and lessons learned

On the day of shaking, our team was thrilled to see our building stand through both ground motions. We thought for our first year back, the team also performed well in the other categories, including, presentation, poster and architecture. Unfortunately, our model was disqualified on a technical rule and thus was not scored overall. We learned a lot from our time in the competition this year and are excited to be returning next year. Being apart of this team increased the interest in earthquake engineering of all the team members involved and we are excited to learn more in the future!



Team Members Stephanie Chausow and Ella Yazbeck working on model.



Seismic Design Team at Competition. Ella Yazbeck, Leah Dixon, Stephanie Chausow and Jia Yu.

ELECTION & ELECTION RESULTS

An election for officers for the 2019-2020 academic year was held in April 2019. We plan to recruit more officers during the summer. The table below shows the officers appointed to the Chapter board who will take office on September 2019.

Role	Name	EERI Member Number	Email	Student Status
President	Arthriya Suksuwan	29903	arthriya@umich.edu	Graduate student
Secretary	Monica Jambu	29898	monicaja@umich.edu	Graduate student

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, flier for Seminar with Dr. Evgueni Filipov
- Item 2, flier for Distinguished Lecture by Dr. Reginald Desroches
- Item 3, flier for Friedman Family Visiting Professional



Earthquake Engineering Research Institute
University of Michigan Student Chapter

EERI SPEAKER SERIES

by

PROF. EVGUENI FILIPOV

23TH OCT
TUESDAY

12:30-1:30PM

*An introduction to earthquake engineering,
Dynamic analysis, How to get involved in the
seismic design competition and many more!*

VENUE
DOW 2150

RSVP here: <https://tinyurl.com/y6vpndg9>

Food will be provided!

Join us for the 2019 EERI Distinguished Lecture with Dean Reginald DesRoches sponsored by:

Civil and Environmental Engineering
Earthquake Engineering Research Institute (EERI)

Friday, January 11
11:00-12:00
GGB 2029

Title: The Promise of Smart Materials in Earthquake Resistant Design

Reginald DesRoches, Ph.D, F. ASCE, F. SEI
William and Stephanie Sick Dean of Engineering
Rice University

ABSTRACT:

Damage from recent earthquakes underscores the importance of developing new approaches and technologies to improve the performance of structures during earthquakes. The presentation will highlight applications of one class of smart materials, shape memory alloys, in improving the performance of structures subjected to earthquake loading. Shape memory alloys belong to a class of shape memory materials which can undergo large deformations while reverting back to their original, undeformed shape. This unique property has led to the development of numerous applications in the biomedical, aerospace, and commercial industry. A multi-scale and multi-disciplinary approach is taken to explore the potential use of these systems for applications in earthquake engineering. Component testing, full-scale testing, and detailed analyses show great potential for these systems to significantly improve the earthquake performance of nonductile buildings and bridges.



Earthquake Engineering Research Institute
University of Michigan Student Chapter

EERI SPEAKER SERIES

by

Seismologist Ivan Wong

12:30-1:30 PM

17TH APR

“Learning from Earthquakes: Implications for Seismic Hazard and Seismic Design in the U.S.”

**VENUE
GGB 2029**

Learn more about seismic risk assessment, hazard reduction and future career prospects in an exclusive student discussion session from 11:00 AM– 12:00 PM