



Presidents Message
By Brent Maxfield
EERI Utah Chapter President

Welcome to a new year. I hope that 2015 becomes all that you hope for. At the beginning of a new year many Americans set goals that they would like to accomplish during the year. I imagine that most of you, like me, have considered making New Year resolutions. Many of your resolutions will involve yourself or your family. Some may involve business resolutions.

We at the Earthquake Engineering Research Institute Utah Chapter have set a resolution to help reduce the risk of earthquakes in Utah. It is impossible to eliminate the risk of earthquakes in Utah, but everything that we can do before a large earthquake occurs will pay large dividends after it occurs. We are committed to helping however we can. Here are some of the things that we working on that will help with this effort:

1. Preparing a 2015 Earthquake Scenario. This document will paint a picture of the effects of a magnitude 7 earthquake on the Salt Lake City segment of the Wasatch Fault. It is being prepared by the EERI Utah Chapter from funding provided by FEMA. This is a multidiscipline effort that is geared toward providing valuable information to the Utah Seismic Safety Commission. It will also be

very valuable to the State Legislature, Jurisdictions along the Wasatch Front, emergency responders, planners, utility companies, business owners, and home owners. Look for this document near the end of March.

2. Organizing a Short Course on Seismic Ground Motions, on March 5, 2015. We are very excited to present this one-day seminar because it will help bridge the gap of understanding between seismologists, geotechnical engineers, and structural engineers.
3. Assisting the BYU Student Chapter increase their understanding of designing for earthquakes by helping to fund their trip to the EERI Annual Meeting in Boston, where they will compete against other university students in the Seismic Design Competition.
4. Coordinating with other professional organizations to combine resources in common goals.
5. Joining with the Structural Engineers Association of Utah (SEAU) to provide a fall presentation on a seismic related topic.

If you are a current member of the EERI Utah Chapter, we welcome your participation. Please contact a member of the board and let them know of your willingness to assist. If you are not a current member of the EERI Utah Chapter, it only costs \$25 per year to join. You can join by following the links at <http://utah.eeri.org>.

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EERI Student Design Competition

By Jamison Fox

EERI BYU Student Chapter

Student membership in EERI provides many opportunities for professional growth and development. Perhaps the most valuable, and certainly the most exciting opportunity that student members have is to participate in the Seismic Design Competition.

Each year in conjunction with the EERI Annual Meeting, the Student Leadership Council hosts the Seismic Design Competition. The competition simulates a real life design situation, providing undergraduate students the opportunity to



BYU EERI Student Chapter Members Jamison Fox, Tim Knight, Danielle Nixon, Jessica Williams, Ian Griffey

historical structure on the downtown construction site. The list of design constraints is quite extensive. If you have an hour to burn and an appetite for dry reading, a PDF of the official rules for 2015 can be found at: <http://slc.eeri.org/SDC2015>.

Thanks to the generous sponsorship from the EERI Utah Chapter, the BYU Student Chapter will be able to send eight student participants to the competition this year. In preparation for the competition at the end of March, our team has already completed the BIM model for the tower, and we are nearing completion on the first of two physical models. In addition to the principles of seismic design that we've learned, we've also gained experience in working in a team setting and completing deliverables by set deadlines. This unique experience will make us more competent engineers, and more prepared to contribute to the profession when we graduate.

We're grateful for the support of the EERI Utah Chapter, and look forward to continued membership in the organization. Be on the lookout for more updates as the competition grows closer!



BYU EERI Student Chapter Members (left to right) Rudy Write, Tim Knight and Ian Griffey.

design a cost effective model skyscraper and to test it under seismic loading. The models are scored based on annual revenue, annual building cost, and annual seismic cost. Each year a different scenario is set forth, with its own unique constraints. This year, for example, the competition will be held in Boston and our design will have to accommodate an existing

BYU EERI Student Chapter Members: Jamison Fox, Ian Griffey, Tim Knight, Melissa Monjaras, Danielle Nixon, Bruce Wainwright, Jessica Williams, Rudy Write.



EERI Utah Chapter Elections

The election concluded on December 3, 2014. The following were elected:

Ron Dunn, Vice President/President Elect

Bob Carey, Board Member

Bill Lund, Board Member

2015 EERI Utah Chapter Leadership			
President	Brent Maxfield	maxfieldba@ldschurch.org	(801) 240-1529
Vice President/President Elect	Ron Dunn	rdunn@dunn-se.com	(801) 575-8877
Secretary/Treasurer	Kevin Franke	kevin_franke@byu.edu	(801) 422-1349
Past President	Les Youd	youd1132@comcast.net	(801) 226-2667
Board Member	Jerod Johnson	JJohnson@reaveley.com	(801) 486-3883
Board Member	Bob Carey	bcarey@utah.gov	(801) 538-3784
Board Member	Bill Lund	billlund@utah.gov	(435) 865-9034

We want to extend a big thank you to Pete McDonough who has served for 3 years on the board. He just finished his term as Past President and was instrumental in getting the EERI Utah Chapter started. We also want to express our appreciation to Kris Pankow and Rob Snow who have served valiantly for two years on the board. We will miss their presence on the board, but they are not retiring. Each of them has volunteered to help with EERI Utah Chapter projects and committees.

Upcoming Events:

January 12-17, 2015: Basin and Range Province Seismic Hazards Summit III. Utah Department of Natural Resources Building, Salt Lake City, Utah. <http://geology.utah.gov/ghp/workgroups/brpshs.htm>

February 10, 2015, 3:30 p.m.: David Wald to present the 2014 EERI Distinguished Lecture: Challenges in Estimating Real-Time Earthquake Shaking & Impact. Location: Utah Cultural Celebration Center, 1335 W. 3100 South, West Valley City, UT

When you hear of an earthquake occurring somewhere in the world, have you ever wondered, "How bad is it". Knowing only the earthquake magnitude is not adequate to understand the impact of the earthquake. What if a large earthquake occurs on the Wasatch Fault. How can you quickly determine the extent of the damage and which areas are most affected. The USGS has developed tools to help answer these questions.

Abstract: The U.S. Geological Survey (USGS) has developed several near-real time earthquake information systems that provide rapid and automated alerting of estimated economic and human impacts following earthquakes. In this talk I describe the four components that rapidly assess an earthquake's impact. First, earthquakes trigger rapid source characterization; second, these source parameters help inform our estimates of shaking-distribution (ShakeMap). Third, losses are modeled by computing populations exposed per shaking intensity level, and country-specific loss functions are used to provide estimates of economic impact and potential casualties (PAGER). Finally, these uncertain loss estimates are communicated in an appropriate form for actionable decision-making among a variety of users

This presentation is open to the public. There is no cost or RSVP needed to attend. Please help spread the word.



Encouraged to attend: Emergency Managers, Risk Managers, First Responders, Building Owners, Engineers, Scientists, Students, and anyone interested in knowing “How bad is it?” following an earthquake.

This presentation is being cosponsored by the Earthquake Engineering Research Institute (EERI) Utah Chapter and Salt Lake County Emergency Management.

March 4, 2015: David Boore to present the 2014 William B. Joyner Lecture: Ground-Motion Prediction Equations: Past, Present, and Future. Social 5:30p to 6:30p, Lecture at 6:00p to 7:30p at Warnock Engineering Building (look for signs to direct you to the room).

The William B. Joyner Memorial Lectures were established by the Seismological Society of America (SSA) in cooperation with the Earthquake Engineering Research Institute (EERI) to honor Bill Joyner's distinguished career at the U.S. Geological Survey and his abiding commitment to the exchange of information at the interface of earthquake science and earthquake engineering, so as to keep society safer from earthquakes.

David Boore was selected as the 2014 recipient of this award. He has presented this lecture at the annual meetings of the Seismological Society of America (SSA) and the Earthquake Engineering Research Institute. In addition, he has presented it at numerous universities including the Aristotle University of Thessaloniki in Greece and the Kandilli Observatory and Earthquake Research Institute in Istanbul, Turkey.

We are grateful that David has agreed to give this lecture to the engineering community in Utah.

March 5, 2015: Short Course on Seismic Ground Motions (More information coming soon):

Please reserve the date of March 5, 2015 for a one-day Short Course on Seismic Ground Motions. This course will provide background information to help understand what the IBC ground motions mean in relationship to a large magnitude earthquake on the Wasatch Fault. It will provide information on predicting the ground motions that could occur if there was ever an earthquake on the Wasatch Fault. The course will focus on providing a practical understanding of the seismic ground motions, specifically focused on the Wasatch Fault and other Utah faults. Speakers will include David Boore and Ivan Wong.

David Boore is one of the authors of the Ground Motion Prediction Equations (GMPE's) used to predict ground motions based on factors such as magnitude, distance, type of fault, shear wave velocity, angle of fault, etc. He will speak on how the GMPE's were developed.

Ivan Wong of URS is serving on the Working Group on Utah Earthquake Probabilities. He will discuss the efforts of this group to estimate the probabilities of large earthquake along the Wasatch Front. He will also discuss the specifics of the Wasatch Fault and other faults and provide the range of input variables to be used in the GMPE's.

April 16, 2015: The Great Utah Shake-Out Event



Millions of people worldwide practice how to **Drop, Cover, and Hold On** each year during **Great ShakeOut Earthquake Drills!**

Utahns can join them by **registering** today for the **Great Utah ShakeOut**. The next Utah ShakeOut Day of Action will be April 16, 2015, though you can register to hold your ShakeOut drill on any day of the year (including Fall, 2014). Participating is a great way for **your family or organization** to be prepared to survive and recover quickly from big earthquakes— wherever you live, work, or travel.

Click to see the YouTube video '160 Fires' depicting the potential effects of an earthquake along the Wasatch Front:
<https://www.youtube.com/watch?v=OXIM4Nf3gZk>



Helpful Earthquake Engineering Links:

Earthquake Engineering Research Institute (EERI) - Utah National EERI	http://utah.eeri.org http://www.eeri.org
Structural Engineering Association of Utah (SEAU)	http://www.seau.org
American Society of Civil Engineers (ASCE) – Utah ASCE GEO-Institute	http://www.sections.asce.org/utah/ http://www.asce.org/geo/
American Council of Engineering Companies (ACEC) - Utah	http://www.acecutah.org
Seismological Society of America (SSA)	http://www.seismosoc.org
Southern California Earthquake Center (SCEC)	http://www.scec.org
Utah Seismic Safety Commission (USSC)	http://ussc.utah.gov
Utah Geological Survey (UGS)	www.geology.utah.gov/utahgeo/hazards/index.htm
University of Utah Seismology and Active Tectonics Research Group	http://www.uusatrg.utah.edu
Utah Division of Occupational and Professional Licensure (DOPL)	http://www.dopl.utah.gov
United States Geological Society (USGS)	http://earthquake.usgs.gov/
Be Ready Utah	http://www.utah.gov/beready/
Utah ShakeOut Website:	http://www.shakeout.org/utah/
Homebuyer’s Guide to Earthquake Hazards in Utah	http://geology.utah.gov/online/pdf/pi-38.pdf

EERI Utah Chapter is seeking articles and announcements for upcoming newsletter editions. Please forward submissions to be considered by the Utah Chapter leadership to Chris Garris at garrisct@pbworld.com.