

**Henry Benjamin (Ben) Mason**  
**Associate Professor**  
**School of Civil and Construction Engineering**  
**Oregon State University**

**Education**

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2011	Ph.D., Civil & Environmental Engineering University of California, Berkeley Ph.D. Adviser: Jonathan D. Bray
2007	M.S., Civil & Environmental Engineering University of California, Berkeley
2006	B.S., Civil & Environmental Engineering Georgia Institute of Technology

**Professional Experience**

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Sep 2017—present	Associate Professor School of Civil and Construction Engineering Oregon State University
Sep 2011—Sep 2017	Assistant Professor School of Civil and Construction Engineering Oregon State University
Aug 2006—Jul 2011	Graduate Student Researcher, Graduate Student Instructor and Teaching Assistant Department of Civil & Environmental Engineering University of California, Berkeley
Jun 2006—Aug 2006	Staff Engineer Jacobs Associates San Francisco, California
Jan 2003—Aug 2005	Engineering-Trainee (Co-operative Student) National Aeronautics and Space Administration Kennedy Space Center, Florida

# Teaching and Advising

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## Credit Courses

As of September 2017, I have taught 17 academic quarter courses at Oregon State University with a total of 2270 student credit hours (note: student credits hours = credits x enrollment)

- Geotechnical Earthquake Engineering (5 offerings)
- Static and Dynamic Soil Behavior (5 offerings)
- Geotechnical Engineering II (5 offerings)
- Advanced Geotechnical Laboratory (1 offering)
- Honors Statics (1 offering)

## Student and Participant Evaluation

Course No.	Term	Enrollment	# Responding	Student Evaluation (#1/#2)	College Medians (#1/#2)	Required /Elective
CE572	Fall 2011	9	7	5.0/5.3	5.0/5.2	Elective
CE578	Winter 2012	20	19	4.7/5.0	5.1/5.3	Elective
CE577	Fall 2012	17	10	5.5/5.7	5.0/5.2	Elective
CE578	Winter 2013	14	10	5.2/5.0	5.0/5.2	Elective
CE373	Spring 2013	105	88	4.9/5.1	4.6/4.7	Required
CE577	Fall 2013	9	8	5.3/5.1	5.0/5.2	Elective
CE373	Spring 2014	92	72	5.0/5.3	4.7/4.9	Required
CE578	Spring 2014	12	8	5.4/5.6	5.1/5.2	Elective
CE570	Fall 2014	11	6	4.2/5.5	5.1/5.3	Elective
CE 373	Spring 2015	90	78	5.0/5.2	4.8/5.0	Required
CE 578	Spring 2015	15	12	4.8/5.0	5.3/5.4	Elective
ENGR211H	Fall 2015	19	14	5.6/5.7	4.8/4.9	Required
CE577	Fall 2015	11	7	5.1/5.3	5.3/5.4	Elective
CE373	Spring 2016	78	59	4.3/4.8	4.7/4.9	Required
HC407	Sum 2016	11	7	5.6/5.8	NA	Elective
CE577	Fall 2016	9	7	5.3/5.6	5.3/5.5	Elective
CE578	Fall 2016	9	8	5.5/5.8	5.3/5.5	Elective
CE373	Spring 2017	54	42	5.2/5.4	4.8/5.0	Required

\* College median scores are shown separately for each level (e.g., 400, 500) taught.

## Workshops and International Teaching

**Geotechnical Earthquake Engineering Workshop.** Co-organized the entire workshop and delivered 1.5 days of course content to the Nepalese Society of Engineering Technology (NSET) in Kathmandu, Nepal during 19 September to 22 September 2016. Course content focused on seismic soil-structure interaction and seismic slope stability. Will be returning in late November 2016 for follow-up workshop.

**HC 407: Natural Hazards Engineering** (Summer 2016). A 2 credit hour colloquium taught for the OSU Honors College in London. Course description: Develop an understanding of vibrations

in structures caused by various natural hazards, discuss mitigation techniques, and discuss the impending Cascadia earthquake and tsunami and preparedness. The Millennium Bridge case history will be a focal point for the course. The course is largely discussion based and highly interactive.

### **Graduate Advisees – Completed**

- Abbas Abdollahi, PhD, *Pore water pressure response in soil during tsunami loading: Numerical formulation and experimentation*, Winter 2017
- Kengo Kato, PhD, *Blast-induced liquefaction: Observational estimation of vibration, settlement, and residual pore water pressure*, Spring 2017 (with S. Ashford)
- William White, MS, *Adjacent structure response sensitivity to seismic events using the direct differentiation method*, Spring 2013
- Kyle Romney, MS, *Soil-bridge interaction during long-duration earthquake motions*, Spring 2013
- Travis Kraupa, MS, *Static and cyclic response of ecoroof soil*, Fall 2013 (with A. Stuedlein)
- Trevor Carey, MS, *Multi-hazard framework and analysis of soil-bridge systems: Long duration earthquake and tsunami loading*, Summer 2014 (with A. Barbosa)
- Rachael Fischer, MS, *Tsunami-induced soil instability*, Spring 2015
- Kimberly Kilroy, MS, *Direct shear interface friction and linear motion shaking response of ecoroofs*, Summer 2015 (with C. Higgins)
- Rachel Adams, MS, *Near-surface friction angles of beach sands during transient loading*, Spring 2017

### **Graduate Advisees – Current (with tentative thesis titles)**

- Margaret Exton, PhD, *Centrifuge testing of earthquake and tsunami-induced liquefaction*, Spring 2019 (with H. Yeh).
- Yingqing Qiu, PhD, *Soil-fluid-structure interaction at the coast during extreme events*, Spring 2020

### **Graduate Thesis or Project Committees**

I have served or I am currently serving as a committee member for **42** graduate students at Oregon State University, and I have advised or co-advised **6** undergraduate student researchers at Oregon State University since September 2011. I am currently a committee member for a PhD student at the University of Colorado, Boulder.

## **Scholarship and Creative Activity**

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### **Books & Book Chapters**

- Yeh, H., Barbosa, A. R., and Mason, H. B. (2015). Tsunami effects in man-made environment. *Encyclopedia of Complexity and Systems Science*. Springer: Berlin, Germany. 10.1007/978-3-642-27737-5\_623-1.

Trombetta, N. W., Fiegel, G. L., and Mason, H. B. (2012). Learning through doing: Using geotechnical research to prepare undergraduates for graduate school. *Shaking the Foundations of Geo-engineering Education*. McCabe, B., Pantazidou, M., and Phillips, D. (eds.). Taylor & Francis: London. ISBN: 978-0-415-62127-4.

### **Journal Publications**

Hess, D., Leshchinsky, B. A., Bunn, M., Mason, H. B., and Olsen, M. (2017). Simplified three-dimensional shallow landslide susceptibility framework considering topography and seismicity, *Landslides*, 1-21. 10.1007/s10346-017-0810-2.

Scott, M. H. and Mason, H. B. (2017). Constant-ductility response spectra for sequential earthquake and tsunami loading, *Earthquake Engineering and Structural Dynamics*. 10.1002/eqe.2871.

Mason, H. B. and Yeh, H. (2016). Sediment liquefaction: A pore-water pressure gradient viewpoint, *Bulletin of the Seismological Society of America* 106(4), 1908-1913. 10.1785/0120150296.

Kraupa, T. J., Stuedlein, A. W., Mason, H. B., and Higgins, C. C. (2016). Engineered ecoroof systems: Geotechnical considerations, *Journal of Infrastructure Systems*. 04016015, 10.1061/(ASCE)IS.1943-555X.0000302.

Moss, R. E. S., Thompson, E. M., Kiefer, D. S., Tiwari, B., Hashash, Y. M. A., Acharya, I., Adhikari, B., Asimaki, D., Clahan, K. B., Collins, B. D., Dahal, S. Jibson, R. W., Khadka, D., MacDonald, A., Madugo, C. L. M., Mason, H. B., Pehlivan, M., Rayamajhi, D., and Uprety, S. (2015). Geotechnical effects of the 2015 magnitude 7.8 Gorkha, Nepal earthquake and aftershocks, *Seismological Research Letters* 86(6), 1514-1523. 10.1785/0220150158.

Trombetta, N. W., Mason, H. B., Zupan, J. D., Hutchinson, T. C., Bray, J. D., and Kutter, B. L. Nonlinear soil-foundation-structure and structure-soil-structure interaction: Engineering demands, *Journal of Structural Engineering*. 147(7), 04014177.

Bolisetti, C., Whittaker, A. S., Mason, H. B., Almufti, I., and Willford, M. (2014) Linear and nonlinear site response analysis for design and risk assessment of safety-related nuclear structures, *Nuclear Engineering and Design* 275, 107-121.

Yeh, H. and Mason, H. B. (2014). Sediment response to tsunami loading: Mechanisms and estimates, *Geotechnique* 64(2), 131-143. 10.1680/geot.13.P.033.

Trombetta, N. W., Mason, H. B., Hutchinson, T. C., Zupan, J. D., Bray, J. D., and Kutter, B. L. (2014). Nonlinear soil-foundation-structure interaction: Centrifuge observations, *Journal of Geotechnical and Geoenvironmental Engineering*, 04013057. 10.1061/(ASCE)GT.1943-5606.0001074.

Chen, Z., Trombetta, N. W., Hutchinson, T. C., Mason, H. B., Bray, J. D., and Kutter, B. L. (2013). Seismic system identification for centrifuge-based nonlinear building models, *Journal of Earthquake Engineering* 17(4), 469-496. 10.1080/13632469.2012.762956.

- Cox, B. R., Boulanger, R. W., Tokimatsu, K., Wood, C., Abe, A., Ashford, S., Donahue, J., Ishihara, K., Kayen, R., Katsumata, K., Kishida, T., Kokusho, T., Mason, H. B., Moss, R., Stewart, J. P., Tohyama, K., and Zekkos, D. (2013). Liquefaction at strong motion stations and in Urayasu City during the 2011 Great East Japan Earthquake, *Earthquake Spectra* 29(S1), 55-80. 10.1193/1.4000110.
- Trombetta, N. W., Mason, H. B., Chen, Z., Hutchinson, T. C., Bray, J. D., and Kutter, B. L. (2013). Nonlinear dynamic foundation and frame structure response observed in geotechnical centrifuge experiments, *Soil Dynamics and Earthquake Engineering* 50, 117-133. 10.1016/j.soildyn.2013.02.010.
- Mason, H. B., Trombetta, N. W., Bray, J. D., Chen, Z., Hutchinson, T. C., and Kutter, B. L. (2013). Soil-foundation-structure interaction of shallowly embedded footings supporting inelastic frame structures, *Soil Dynamics and Earthquake Engineering* 48, 162-174. 10.1016/j.soildyn.2013.01.014.

### **Peer-Reviewed Conference Publications**

- Abdollahi, A., Adams, R. K., and Mason, H. B. (2017) Earthquake-induced water-level rise: Implications for tsunami-induced sediment instability in coastal areas, *GeoCongress 2017*. Orlando, Florida.
- Mason, H. B. and Fischer, R. M. (2015). Soil-instability and sediment transport estimates for a hypothetical tsunami event at Seaside, Oregon, In *Proceedings of the Coastal Structures and Solutions to Coastal Disasters Joint Conference 2015*. Boston, Massachusetts.
- Kato, K., Mason, H. B., and Ashford, S. A. (2015). Ground surface vibration from blast-induced liquefaction testing in Christchurch, New Zealand, In *Proceedings of the Sixth International Conference on Earthquake Geotechnical Engineering*. Christchurch, New Zealand.
- Rayamajhi, D., Kato, K., Mason, H. B., and Ashford, S. A. (2015). Seismic response of piled bridge abutments in multi-layered liquefiable soil deposits, In *Proceedings of the Sixth International Conference on Earthquake Geotechnical Engineering*. Christchurch, New Zealand.
- Stuedlein, A. W., Abdollahi, A., Mason, H. B., and French, R. (2015). Shear wave velocity measurements of stone column improved ground and effect on equivalent linear site response analyses, In *IFCEE 2015, Geotechnical Special Publication 256*. San Antonio, Texas. 2306-2317. 10.1061/9780784479087.214.
- Carey, T., Mason, H. B., Barbosa, A. R., and Scott, M. H. (2014). Modeling framework for soil-bridge system response during sequential earthquake and tsunami loading. In *Proceedings of the Tenth National Conference on Earthquake Engineering*. Anchorage, Alaska.
- Romney, K. T., Barbosa, A. R., and Mason, H. B. (2014). Developing a soil-bridge interaction model for studying the effects of long-duration earthquake motions. In *Proceedings of the Tenth National Conference on Earthquake Engineering*. Anchorage, Alaska.
- Kraupa, T. J., Mason, H. B., Stuedlein, A. W., and Higgins, C. (2014). Characterization of ecoroofs and ecoroof soils. In *Proceedings of GeoCongress 2014, Geotechnical Special Publication 234: Geo-Characterization and Modeling for Sustainability*. Atlanta, Georgia. 3571-3580. 10.1061/9780784413272.346.

- Puangnak, H., Kutter, B. L., Mason, H. B., Choy, B. Y., and Bray, J. D. (2012). Constructive and destructive footing-soil-footing interaction for vertically vibrating footings. In *Proceedings of Geocongress 2012, Geotechnical Special Publication 225: State of the Art and Practice in Geotechnical Engineering*. Oakland, California. 1849-1858. 10.1061/9780784412121.190.
- Mason, H. B. and Chen, Z. (2012). Progressive mainshock-aftershock damage in Christchurch, New Zealand. In *Proceedings of the 2012 NZSEE Conference*. Christchurch, New Zealand.
- Fiegel, G. L., Mason, H. B., and Trombetta, N. W. (2011). Graduate students mentoring undergraduate researchers on a large-scale experimental research project – A case study. In *Proceedings of the 118th ASEE Annual Conference & Exposition*. Vancouver, Canada.
- Mason, H. B., Bray, J. D., Kutter, B. L., Wilson, D. W., and Choy, B. C. (2010). Earthquake motion selection and calibration for use in a geotechnical centrifuge, In *Proceedings of the Seventh International Conference of Physical Modelling in Geotechnics*, Zurich, Switzerland. 361-366.
- Mason, H. B., Chen, Z., Jones, K. C., Trombetta, N. W., Bray, J. D., Hutchinson, T. C., Bolisetti, C., Whittaker, A. S., Choy, B. Y., Kutter, B. L. and Fiegel, G. L. (2010). Soil-foundation-structure interaction effects on model buildings within a geotechnical centrifuge. In *Proceedings of the 9th US National and 10th Canadian Conference on Earthquake Engineering*. Toronto, Canada.
- Chen, Z., Hutchinson, T. C., Trombetta, N. W., Mason, H. B., Bray, J. D., Jones, K. C., Bolisetti, C., Whittaker, A. S., Choy, B. Y., Kutter, B. L., Fiegel, G. L., Montgomery, J., Patel, R. J., and Reitherman, R. D. (2010). Seismic performance assessment in dense urban environments: Evaluation of nonlinear building-foundation systems using centrifuge tests. In *Proceedings of the Fifth International Conference on Recent Advances in Geotechnical Engineering and Soil Dynamics*. San Diego, California.
- Mason, H. B., Bray, J. D., Jones, K. C., Chen, Z., Hutchinson, T. C., Trombetta, N. W., Choy, B. C., Kutter, B. L., Fiegel, G. L., Montgomery, J., Patel, R. J., Reitherman, R. D., Bolisetti, C. and Whittaker, A. S. (2010). Earthquake input motions and seismic site response in a centrifuge test examining SFSI effects. In *Proceedings of the Fifth International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics*. San Diego, California.

### **Conference Proceedings, Published Abstracts, and Reports**

- Abdollahi, A., Exton, M. C., and Mason, H. B. (2016). Varying diffusion coefficients for sand: Modeling, experiments, and implications for sand liquefaction. In *Proceedings of GeoStructures Congress 2016*, Phoenix, Arizona. (abstract)
- Mason, H. B., Barbosa, A. R., and Carey, T. J. (2016). Soil-bridge modeling in OpenSees considering long duration earthquake motions and soil liquefaction. In *Proceedings of GeoStructures Congress 2016*, Phoenix, Arizona. (abstract)
- Carey, T. J., Mason, H. B., and Barbosa, A. R. (2016). SSI-Bridge 2: Soil-bridge interaction during long-duration earthquake motions, Final Project Report, Pacific Northwest Transportation Consortium (PacTrans), University of Washington, Seattle, Washington.

- Mason, H. B., Barbosa, A. R., Carey, T. J., and Scott, M. H. (2015). Tsunami bore impact on soil-bridge systems. In *Proceeding of the 2015 ASCE Structures Congress*, Portland, Oregon. (abstract)
- Goldfinger, C., Galer, S., Hausmann, R., Black, B., Beeson, J., Medeiros, G., Raymond, R., Collins, T., Mason, H. B., Hamilton, T. S., and Nelson, C. H. (2015). Northern Cascadia integrated paleoseismic records from onshore and offshore core data, In *Proceedings of the Northwest Energy Association*. Hood River, Oregon. (abstract)
- Hashash, Y. M. A., Tiwari, B., Moss, R. E. S., Asimaki, D., Clahan, K. B., Kieffer, D. S., Dreger, D. S., MacDonald, A., Madugo, C. M., Mason, H. B., Pehlivan, M., Rayamajhi, D., Acharya, I., and Adhikari, B. (2015). Geotechnical field reconnaissance: Gorkha (Nepal) Earthquake of April 25 2015 and related shaking sequence, GEER Association Report No. GEER-040, Version 1. Geotechnical Extreme Events Reconnaissance Association, Berkeley, California.
- Barbosa, A. R. and Mason, H. B. (2014). Field notes from Oregon State University team – Appendix A of the PEER report on preliminary notes and observations on the August 24, 2014, South Napa Earthquake, Editors: G. S. Kang and S. A. Mahin, Pacific Earthquake Engineering Research Center, Report No. 2014/13, Berkeley, California.
- Kato, K., Mason, H. B., and Ashford, S. A. (2014). Benchmarking lateral spreading analysis procedures using the Mihama Bridge, Japan case history, In *Proceedings of the Second European Conference on Earthquake Engineering and Seismology*, Istanbul, Turkey.
- Barbosa, A.R., Mason, H. B., and Romney, K. T. (2014). SSI-Bridge: Soil-bridge interaction during long-duration earthquake motions, Final Project Report, Pacific Northwest Transportation Consortium (PacTrans), University of Washington, Seattle, Washington.
- Bolisetti, C., Whittaker, A. S., Almufti, I., Mason, H. B., and Wilford, M. (2013). Numerical methods in site response analysis for nuclear applications, In *Transactions of SMiRT-22*. San Francisco, California.
- Mason, H. B., White, W. S., and Scott, M. H. (2013). Urban seismic response sensitivity of adjacent buildings, In *Proceedings of the Tenth International Conference on Urban Earthquake Engineering*. Tokyo, Japan.
- Trombetta, N. W., Hutchinson, T. C., Mason, H. B., Zupan, J. D., Bray, J. D., Bolisetti, C., Whittaker, A. S., Chen, Z., and Kutter, B. L. (2012). Centrifuge modeling of structure-soil-structure interaction: Seismic performance of inelastic building models. In *Proceedings of the 15th World Conference on Earthquake Engineering*. Lisbon, Portugal.
- White, W. S., Scott, M. H., and Mason, H. B. (2012). Probabilistic analysis of structure-soil-structure interaction in dense urban environments. In *Proceedings of the 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Sound Bend, Indiana. (abstract)

- Kayen, R. E., Ishihara, K., Stewart, J. P., Tokimatsu, K., Cox, B., Tanaka, Y., Kokusho, T., Mason, H. B., Moss, R. E. S., Zekkos, D., Wood, C. M., Katsumata, K., Estevez, I. A., Cullenward, S. S., Tanaka, H., Harder, L. F., Kelson, K. I., and Kishida, T. (2012) Geotechnical deformations at ground failure sites from the March 11, 2011 Great Tohoku Earthquake, Japan: Field mapping, lidar modeling, and surface wave investigation. In *Proceedings of the 9th CUEE and 4th ACEE Joint Conference*. Tokyo, Japan.
- Mason, H. B., Jones, K. C., Zupan, J. D., Bray, J. D., Trombetta, N. W., Hutchinson, T. C., Chen, Z., Choy, B. Y., Puagnak, H., Kutter, B. L., Montgomery, J., Patel, R. J., Proto, C., Gille, S., Lund, J., Fiegel, G. L., Bolisetti, C., Whittaker, A. S., and Reitherman, R. (2011). Examining structure-soil-structure interaction using dynamic centrifuge testing, In *Proceedings of the NSF CMMI Research and Innovation Conference*. Atlanta, Georgia.

### **Papers Currently under Peer Review**

- Barbosa, A. R., Mason, H. B., and Soti, R. Earthquake reconnaissance of damage and recovery times of unreinforced masonry buildings following the 2014 south Napa, California earthquake, *Journal of Earthquake Engineering*. (revising for resubmission)
- Leshchinsky, B. A., Mason, H. B., Olsen, M. J., and Gillins, D. Lateral spreading within a limit equilibrium framework: Newmark sliding blocks with degrading yield accelerations, *Geotechnique*. (under second review)
- Asimaki, D., Mason, H. B., Adams, R. K., Mohammadi, K., Rajaure, S., Khadka, D. Site effects and damage patterns of the Ghoraka earthquake sequence in Kathmandu, *Earthquake Spectra*. (under second review)
- Mason, H. B., Hurwitz, D. S., Adams, R. K., Buker, K., Slocum, R. K., and Scott, M. H. Increasing student understanding of response spectra: An argument for the inductive learning approach, *Earthquake Spectra* (revising for second review)

### **Opinion Pieces and Press**

- Courthouse News Service, “Ring of fire earthquakes form lesson for Pacific Northwest” 21 April 2016. <http://www.courthousenews.com/2016/04/21/ring-of-fire-earthquakes-form-lesson-for-pacific-northwest.htm>
- Newsweek, “A Pacific Northwest earthquake could cause thousands of landslides” 12 January 2016. <http://www.newsweek.com/nepal-earthquake-landslides-pacific-northwest-414695>
- KTVZ, “Thousands of landslides after Nepal quake raise NW parallels” 11 January 2016. <http://www.ktvz.com/news/thousands-of-landslides-after-nepal-quake-raise-nw-parallels/37372890>
- KGW Portland, “Earthquake-caused landslide risk high in Oregon” 11 January 2016. <http://www.kgw.com/news/local/earthquake-caused-landslide-risk-high-in-oregon/13294890> (interviewed for evening news)
- Corvallis Gazette-Times, “Earthquake researchers” 7 July 2015. [http://www.gazettetimes.com/news/local/earthquake-researchers/article\\_51fe0afe-8a19-57f5-affe-5dc3e5c71c74.html](http://www.gazettetimes.com/news/local/earthquake-researchers/article_51fe0afe-8a19-57f5-affe-5dc3e5c71c74.html) (also in Print edition)
- The Oregonian, “Napa earthquake argues for better education in Oregon: Guest opinion” 4 September 2014 (written with A. R. Barbosa). [http://www.oregonlive.com/opinion/index.ssf/2014/09/napa\\_earthquake\\_argues\\_for\\_bet.html](http://www.oregonlive.com/opinion/index.ssf/2014/09/napa_earthquake_argues_for_bet.html) (also in Print edition 5 September 2014)



Terra, "Oregon 9.0: When the next big one comes, will we be ready?" Spring 2013.  
<http://oregonstate.edu/terra/2013/05/oregon-9-0/>

Associated Press, "Northwest dams not built to withstand big quake." 1 April 2013. KTVB.com, Seattle Post-Intelligencer, Statesman Journal.  
<http://www.statesmanjournal.com/viewart/20130402/NEWS/304020016/Corps-assesses-quake-threat-20-dams>

Life@OSU, "Engineer looks forward to making Oregon a safer state." 12 April 2012.  
<http://oregonstate.edu/dept/ncs/lifeatosu/2012/engineer-looks-forward-to-making-oregon-a-safer-state/>

### **Presentations**

Invited talk, Predicting shaking and liquefaction induced ground failures during earthquakes and tsunamis, United States Geological Survey, Menlo Park, California, 25 May 2017

Invited talk, Coastal soil instability during tsunamis, Geotechnical Engineering & Geomechanics Seminar, University of Colorado, Boulder, Colorado, 28 April 2017

Invited talk, Modeling pore water pressure in sediments during tsunami loading, Applied Mathematics Seminar, Oregon State University, Corvallis, Oregon, 10 March 2017

Invited talk, Sediment instability during tsunamis, Physics Department Seminar, Oregon State University, Corvallis, Oregon, 9 November 2016

Guest Lecture, Seismic site response, GEO 380: Earthquakes in the Pacific Northwest, Oregon State University, Corvallis, Oregon, 2 November 2016

Invited talk, Sediment instability during tsunamis, Meeting at CH2M, Corvallis, Oregon, 9 June 2016

Invited talk, Timely Lessons for Oregonians from the 2015 Nepal Earthquake, 2016 Da Vinci Days, Corvallis, Oregon, 18 May 2016

Invited talk, Sediment instability during tsunamis, Geotechnical Graduate Student Society of UC Davis Seminar, Davis, California, 25 February 2016

Conference talk, Liquefaction and soil failures following the 2015 Gorkha, Nepal Earthquake, GeoStructures Congress 2016, Phoenix, Arizona, 16 February 2016

Conference talk, Varying diffusion coefficients for sand: Modeling, experiments, and implications for sand liquefaction, GeoStructures Congress 2016, Phoenix, Arizona. (presented by A. Abdollahi with M.C. Exton), 16 February 2016

Conference talk, Soil-bridge modeling in OpenSees considering long duration earthquake motions and soil liquefaction, GeoStructures Congress 2016, Phoenix, Arizona. (presented by T. J. Carey with A. R. Barbosa), 16 February 2016

Invited talk, Liquefaction-induced sediment instability during near-field tsunami loading, Department of Civil and Environmental Engineering Seminar, Northwestern University, Evanston, Illinois, 26 January 2016

Guest Lecture, Engineering vibration, GEO 380: Earthquakes in the Pacific Northwest, Oregon State University, Corvallis, Oregon, 9 November 2015.

Conference talk, Liquefaction and soil failures following the 2015 Gorkha, Nepal Earthquake, Sixth International Conference on Earthquake Geotechnical Engineering, Christchurch, New Zealand, 4 November 2015

- Conference talk, Seismic response of piled bridge abutments in multi-layered liquefiable soil deposits, Sixth International Conference on Earthquake Geotechnical Engineering, Christchurch, New Zealand, 4 November 2015
- Invited talk, Strengthening Corvallis Against Earthquakes, Corvallis City Club Meeting, Corvallis, Oregon, 12 October 2015 (with R. Yeats, C. Goldfinger, and S. Ashford)
- Conference talk, Soil-instability and sediment transport estimates for a hypothetical tsunami event at Seaside, Oregon, Coastal Structures and Solutions to Coastal Disasters Joint Conference 2015, Boston, Massachusetts, 11 September 2015
- Invited talk, Geotechnical engineering aspects of the M7.8 Gorkha Earthquake sequence, Tribhuvan University, Kathmandu, Nepal, 24 June 2015 (with D. Asimaki and D. Rayamajhi)
- Invited talk, Geotechnical engineering aspects of the M7.8 Gorkha Earthquake sequence, Kwopha Engineering College, Bhaktapur, Nepal, 23 June 2015 (with D. Asimaki and D. Rayamajhi)
- Conference talk, Tsunami bore impact on soil-bridge systems, 2015 Structures Congress, Portland, Oregon, 23 April 2015.
- Guest Lecture, Soils support buildings and infrastructure: Focus on natural hazards, CROP/SOIL/HORT/AREC 199: Issues on Sustainable Agriculture, Oregon State University, Corvallis, Oregon 4 February 2015.
- Guest Lecture, Earthquake and tsunami engineering, GEOL 353: Geologic Hazards, University of Oregon, Eugene, Oregon, 10 November 2014
- Guest Lecture, Soil liquefaction, GEO 380: Earthquakes in the Pacific Northwest, Oregon State University, Corvallis, Oregon, 7 November 2014
- Guest Lecture, What is geotechnical engineering?, CCE 101: Civil and Construction Engineering Orientation, Oregon State University, Corvallis, Oregon, 3 November 2014
- General lecture, Lessons learned from the 2014 Napa Earthquake and implications for Oregon, School of Civil and Construction Engineering, Oregon State University, Corvallis, Oregon, 15 October 2014
- Invited talk, Implementing Oregon's Resilience Plan: The role philanthropy can play, Meeting at Tillamook County attended by United State Congresswoman Suzanne Bonamici, Oregon State Senators Arnie Roblan and Betsy Johnson, and Oregon State Representatives Debbie Boone and David Gomberg as well as representatives from the Oregon Governor's office. Tillamook, Oregon, 23 September 2014
- Invited panel session talk, Experimental observations of structure-soil-structure interaction, Tenth National Conference on Earthquake Engineering, Anchorage, Alaska, 24 July 2014
- Conference talk, Developing a soil-bridge interaction model for studying the effects of long-duration earthquake motions, Tenth National Conference on Earthquake Engineering, Anchorage, Alaska, 22 July 2014 (presented by K. T. Romney, with A. R. Barbosa)
- Conference talk, Modeling framework for soil-bridge system response during sequential earthquake and tsunami loading, Tenth National Conference on Earthquake Engineering, Anchorage, Alaska, 22 July 2014 (presented by T. J. Carey, with A. R. Barbosa and M. H. Scott)
- Invited talk, Residual and momentary liquefaction: similarities and differences, University of Washington Geo-Institute Graduate Student Society, Seattle, Washington, 6 March 2014

Conference talk, Characterization of ecoroofs and ecoroof materials, GeoCongress 2014, Atlanta, Georgia, 24 February 2014

Guest Lecture, Liquefaction hazards in the Pacific Northwest, GEOL 353: Geologic Hazards, University of Oregon, Eugene, Oregon, 18 February 2014

Invited talk, Oregon-specific earthquake engineering issues, Construction Specification Institute (CSI): Willamette Valley Chapter Dinner Meeting, Eugene, Oregon, 25 April 2013

Workshop talk, Overview of geotechnical earthquake engineering at OSU, Advances in Geotechnical Earthquake Engineering Seminar, Oregon State University, Corvallis, Oregon, 23 March 2013

Invited talk, Tsunami geotechnical engineering and advances in ecoroof design, Geotechnical Graduate Student Society of UC Davis Seminar, Davis, California, 14 March 2013

Invited conference talk, Urban seismic response sensitivity of adjacent buildings, 10th International Conference on Urban Earthquake Engineering, Tokyo, Japan, 2 March 2013

Conference talk, Understanding structure-soil-structure interaction using the direct differentiation method, 2012 Joint Conference of the Engineering Mechanics Institute and the 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, South Bend, Indiana, 18 June 2012

Conference talk, Progressive mainshock-aftershock damage in Christchurch, New Zealand, 2012 New Zealand Society of Earthquake Engineering (NZSEE) Conference, University of Canterbury, Christchurch, New Zealand, 14 April 2012

Guest Lecture, Seismic site response, GEO 380: Earthquakes in the Pacific Northwest, Oregon State University, Corvallis, Oregon, 10 February 2012

General lecture, NSF site visit presentation: NEES city block project, UC Davis Center for Geotechnical Modeling, Davis, California, 24 May 2011

Exit seminar, Seismic performance assessment in dense urban environments, UC Berkeley Geoen지니어ing Seminar, Berkeley, California, 20 April 2011

Invited talk, Seismic performance assessment in dense urban environments, Tufts University, Department of Civil & Environmental Engineering, Medford, Massachusetts, 14 March 2011

Invited talk, Seismic performance assessment in dense urban environments, Oregon State University, School of Civil & Construction Engineering, Corvallis, Oregon, 1 March 2011

Workshop talk, Seismic performance assessment in dense urban environments, San Francisco Geo-Institute Chapter Workshop, Oakland, California, 15 February 2011

Invited talk, Soil-structure interaction and SSI of closely-spaced buildings, UC Berkeley Geoen지니어ing Seminar, Berkeley, California, 3 November 2010

Conference talk, Seismic performance assessment in dense urban environments, PEER Annual Meeting, Quake Summit, San Francisco, California, 9 October 2010

Invited talk, Soil-structure interaction procedures and SSI effects of closely-spaced buildings, UC Berkeley Geoen지니어ing Seminar, Berkeley, California, 28 April 2010

Workshop talk, Soil-foundation-structure interaction in dense urban environments: Preliminary results from two SFSI centrifuge tests, San Francisco Geo-Institute Chapter Workshop, Oakland, California, 16 February 2010

Invited talk, Performing complex centrifuge tests while remaining sane and quelling staff revolts:  
A cautionary tale, Geotechnical Graduate Student Society of UC Davis Seminar, Davis,  
California, 7 January 2010

Workshop talk, Centrifuge testing with a large team, 5th Annual UCD/RPI Centrifuge Research  
and Training Workshop, Davis, California, 11 September 2009

### **Grant and Contract Support**

Retrodicting earthquake source characteristics from tsunami inundation along the Oregon coast,  
Oregon Sea Grant, 05/17-01/18, \$48,535

Comprehensive seismic analysis of Willamette Valley Silts, Cascadia Lifelines Program, 04/13-  
09/17, \$229,204 (approximate)

Geotechnical Earthquake Engineering Workshops in Kathmandu, Nepal, OFDA/USAID, 10/15-  
09/16, with S. Hough and D. Asimaki, \$60,000

Centrifuge modeling of coastal soil-structure instability, National Science Foundation, 09/15-  
08/18, with H. Yeh, \$823,019

Innovation in the Classroom: A Transportation Geotechnics Application of Desktop Learning  
Modules to Promote Inductive Learning, Oregon State University, 01/15-12/15, with D.  
Hurwitz, \$20,000

Development of Tsunami Design Guide Specifications for Bridges, Pacific Earthquake  
Engineering Research Center, 12/14-11/17, with M. Scott, A. Barbosa, H. Yeh, and S.  
Yim, \$121,349

MRI: Acquisition of an x-ray fluorescence scanner for automated high-resolution sensing of earth  
system archives, National Science Foundation, 2014, with A. Carlson, J. Stoner, A. Mix,  
R. Wheatcroft, J. Petit-Ridge (my role: Senior Personnel), \$392,000

SSI Bridge 2: Evaluation of soil-structure interaction effects on PNW bridges, PacTrans: Region  
10 University Transportation Center, 10/13-09/14, with A. Barbosa, \$20,000

SSI Bridge: Evaluation of soil-structure interaction effects on PNW bridges, PacTrans: Region  
10 University Transportation Center, 07/12-06/13, with A. Barbosa, \$44,727

Multihazard performance and design of ecoroofs, National Science Foundation, 07/12-06/17,  
with C. Higgins and A. Stuedlein, \$335,000

Benchmarking recently developed procedures for designing pile foundations in laterally  
spreading ground, California Department of Transportation, 07/12-06/13, \$89,914.

## **Service**

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### **University and Community Service**

Participant, University Honors College Hendricks/Wiesner Scholarship Committee, University  
Honors College, 2017

Judge, Engineering Excellence Awards, American Council of Engineering Companies of  
Oregon, Portland, Oregon, 17 November 2016

Faculty Search Committee Member, Non-destructive Testing and Analysis, School of Civil &  
Construction Engineering, 2015 – 2016

Staff Search Committee Member, CCE Public Representative 2, School of Civil & Construction  
Engineering, 2015

Faculty Representative, Co-Chair, Earthquake Engineering Research Institute Student Group, 2014 – present  
Graduate Recruiting Committee, Chair, School of Civil & Construction Engineering, 2014 – 2016  
Fundamentals of Engineering, Geotechnical Engineering Review, Chi Epsilon, 2012  
Graduate Assessment Committee, Chair, School of Civil & Construction Engineering, 2012 – 2013  
Strategic Planning Committee, School of Civil & Construction Engineering, 2012 – 2013  
Faculty Search Committee Member, Geotechnical Engineering, School of Civil & Construction Engineering, 2011 – 2012  
Geotechnical Engineering Group Coordinator, School of Civil & Construction Engineering, 2011 – 2013  
Graduate Committee, Member, School of Civil & Construction Engineering, 2011 – 2013 and 2015 – 2016

### **Conference and Workshop Organization**

2016 Geotechnical Earthquake Engineering Workshop at the Nepalese Society of Engineering Technology in Kathmandu, Nepal  
2016 Joint ASCE Geo-Institute/Structural Engineering Institute Conference Technical Program Subcommittee Chair  
Short Course on Seismic Site Response Analysis and Seminar on Advances in Geotechnical Earthquake Engineering, March 22-23, 2013, Corvallis, Oregon; co-organized with Armin Stuedlein

### **Conference Program Committees**

Session Moderator, Liquefaction Effects on Structures: GeoStructures Congress 2016, Phoenix, Arizona, 16 February 2016  
Session Moderator, Post-Earthquake Reconnaissance Findings from the M7.8 Gorkha Earthquake: GeoStructures Congress 2016, Phoenix, Arizona, 16 February 2016  
Session Moderator, Liquefaction Testing & Modeling: GeoStructures Congress 2016, Phoenix, Arizona, 16 February 2016  
Session Chair, Computational Mechanics I: 2012 Joint Conference of the Engineering Mechanics Institute and the 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability, South Bend, Indiana, 18 June 2012  
Session Chair, Session S6-4 – Structural Engineering – Others: 10th International Conference on Urban Earthquake Engineering, Tokyo, Japan, 2 March 2013  
Panel Member, Special Session #21: Structure-Soil-Structure Interaction: Tenth National Conference of Earthquake Engineering, Anchorage, Alaska

### **Reviewing**

Proposals: National Science Foundation, United States Geologic Survey, Icelandic Research Fund  
Refereed Journal Articles: *ASTM Journal of Testing and Evaluation*, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, *Bulletin of the Seismological Society of America*, *Canadian Geotechnical Journal*, *Earthquake Spectra*, *Engineering*

*Structures, Geotechnique, Geotechnique Letters, Geotechnical and Geological Engineering, Seismological Research Letters, Soil Dynamics and Earthquake Eng.*  
Refereed Conference Proceedings: ASCE *GeoCongress 2017* Proceedings, ASCE *IFCEE 2015* Proceedings, Tenth National Conference of Earthquake Engineering, ASCE *GeoCongress 2012* Proceedings, *Sound Geotechnical Research to Practice*, ASCE Geotechnical Special Publication

## **Memberships**

- American Society of Civil Engineers (ASCE), Member, 2008 – 2016
  - Geo-Institute
  - Engineering Mechanics Institute
  - Structural Engineering Institute
  - Coasts, Oceans, Ports, and River Institute
  - San Francisco Section, Geotechnical Group, 2008 – 2011
  - Portland Section, Geotechnical Group, 2012 – present
- American Society of Engineering Education (ASEE), Member, 2011 – 2013
- Consortium of Universities for Research of Earthquake Engineering (CUREE), Member, 2012 – 2016
- Earthquake Engineering Research Institute (EERI), Member, 2008 – present
  - Student Activities Committee, Member, 2013 – present
- Geotechnical Extreme Events Reconnaissance (GEER), Member, 2007 – present
  - Recorder, March 2007 – May 2009
- Seismological Society of America, Member, 2008 – present
- United States Universities Council on Geotechnical Education and Research (USUCGER), Member, 2011 – present
  - Board Nominating Committee, 2013-present

## **Awards**

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Oregon State University Honors College Professor of the Year, 2016  
Outstanding Graduate Student Instructor Award, UC Berkeley, 2008  
William T. and Helen S. Halstead Scholarship, UC Berkeley, 2007-2008  
H. Bolton Seed Fellowship, UC Berkeley, 2006-2007  
National Science Foundation Graduate Fellowship Honorable Mention, 2006  
William V. Power Graduate Award, UC Berkeley, 2006  
Outstanding Sophomore in Civil Engineering Award, Georgia Tech, 2004  
President's Undergraduate Research Award, Georgia Tech, 2004