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A. EDUCATION AND EMPLOYMENT INFORMATION**A1. Education**

- 2011 **Ph.D.**, Structural Engineering, University of California, San Diego
Dissertation: “*Simplified Vector-valued Probabilistic Seismic Hazard and Seismic Demand Analysis of a 13-story Reinforced Concrete Frame-Wall Building.*”
Faculty Advisors: *Prof. Joel P. Conte and Prof. Jose Restrepo.*
- 2002 **M.S.**, Structural Engineering, Instituto Superior Técnico (IST), Portugal,
Thesis: “*Wavelets on the Interval Applied to Finite Elements*”.
Faculty Advisor: *Prof. Luis Castro* (Instituto Superior Técnico, Portugal)
- 1998 **Licenciatura** (5 year undergraduate degree) in Civil Engineering,
Instituto Superior Técnico (IST), Portugal, September 1998
Focus: *Structural Dynamics, Bridges, Foundations and design of special structures*

A2. Professional Experience

ACADEMIC

- 12/2011 - Present **Assistant Professor**, School of Civil and Construction Engineering
Oregon State University.
- 03/2002 – 12/2010 **Tenure-track Assistant Lecturer**, Department of Civil Engineering,
Universidade Nova de Lisboa, Lisbon, Portugal

PROFESSIONAL

- 06/2006 – 09/2006 **Engineer**, Englekirk Partners Consulting Engineers. Los Angeles.
Developed a performance-based earthquake engineering design of a 39 story tower to be built in downtown San Diego, USA. Used Perform-3D for nonlinear structural analysis and performance-based design verifications that were submitted to a Peer Review panel.
- 08/1997 – 01/2002 **Design Engineer**, Profico, Lda. Portugal.
Design and project management of several bridges and buildings.

B. TEACHING, ADVISING, AND OTHER ASSIGNMENTS**B1. Instructional Summary****B1.1. Credit Courses**

Number	Course Title	Term/Year	Credits	Enrollment
CE 534	Structural Dynamics (G)	Winter 2012	4	12
CE 419	CE Capstone (U)	Spring 2012	4	30
CE 382	Structural Theory II (U)	Winter 2013	4	108
CE 580	Advanced Seismic Design (G)	Spring 2013	3	18
CE 534	Structural Dynamics (G)	Fall 2013	4	16
CE 382	Structural Theory II (U)	Winter 2014	4	60
CE 580	Probability-based Analysis and Design (G)	Spring 2014	4	19
CE 534	Structural Dynamics (G)	Fall 2014	4	20
CE 382	Structural Analysis (U) - Section 1	Winter 2015	4	29
CE 382	Structural Analysis (U) - Section 2	Winter 2015	4	66
CE 580	Performance-based Design (G)	Spring 2015	3	8
CE 588	Probability-based Analysis and Design (G)	Winter 2016	4	11
CE 580	Performance-based Seismic Design (G)	Spring 2016	3	9
CE 382	Structural Theory II (UG)	Spring 2016	4	55

U – Undergraduate course; G – Graduate course

B1.2. Non-Credit Courses and Workshops

- Assessing, Coding, and Marking of Highway Structures in Emergency Situations.** Feb. 29- March 1, 2016. Irvine, CA. Co-taught with Michael Olsen and Gene Roe.
Hosted by the National Academies of Sciences, Transportation Research Board.
- Workshop on Multi-Hazard Analysis of Structures using OpenSees** (July 2014)
 - URL 1: <http://lese.fe.up.pt/OSDPt2014/>
 - URL 2: http://web.engr.oregonstate.edu/~barbosa/products/Programme_final_OSD.pdf
 - Co-organized with researchers from three Portuguese Universities
 - Attended by 66 people (Industry, Researchers, and Graduate Students) from 10 different countries.
 - Keynote presentations from: Dr. Pedro Arduino (University of Washington, US); Dr. Andre Barbosa (OSU, US); Dr. Frank McKenna (UC Berkeley/PEER, US); Dr. Lauren Stewart (Georgia Institute of Technology, US); Dr. Asif Usmani (University of Edinburgh, UK)
 - Other 12 presentations were made at the workshop by authors from 7 different countries.

3. **OpenSees on the Road at Oregon State University** (November 2013)

- Co-organized with Dr. Michael Scott (Oregon State University)
- URL 1: <http://calendar.oregonstate.edu/event/89558/>
- URL 2: <https://nees.org/events/details/251>
- Presentations from by: Dr. Frank McKenna (UC Berkeley/PEER); Professor Pedro Arduino (University of Washington); Dr. Michael Scott (Oregon State University); Dr. Andre Barbosa (Oregon State University)
- Attended by 35 people (Industry, Researchers, and Graduate Students)

B1.3. Course and Curriculum Development

CE 382 - STRUCTURAL THEORY II. This course presents traditional methods in Structural Analysis. It is a continuation of CE 381 – Structural Analysis I. In both courses the book by Hibbeler (Structural Analysis) is covered from one end to the other. Topics covered include: Analysis of statically determinate and indeterminate structures (beams, frames, trusses); Deflections; Principle of Virtual Work; Introduction to matrix methods for Structural Analysis.

All the material for this course was prepared by me from the ground up. Since CE 382 meets for three hours a week for regular lecture and two hours a week for recitation, class material was developed for both. For the lectures, I developed lecture slides that include the main concepts that students need to understand. In addition, worked examples were prepared and are presented to illustrate how the main concepts and underlying theory are applied. During lecture, focus is placed on explaining the physics behind equations. At the end of each lecture, additional (challenging) problems with answers are provided to spur curiosity and stimulate thinking by exposing students to problems beyond the ones presented in the lecture. In recitation, each week, students are given a problem to work on as a group and turn it in at the end of each class. The objective is that all groups turn in correct and complete solutions, which is achieved in 95% + cases. Instructors and graduate teaching assistants are available in class during recitation to provide continuous feedback on an individual and group basis and to support peer group discussions on how to solve and complete the in-class assignment. Additional methods of assessment include weekly homeworks, midterm and final. All assessment materials are prepared from scratch yearly. At the time of writing this statement, I am starting my third year teaching this course. I have worked hard to show continuous improvement and I have incorporated feedback from the students each year to improve the delivery of the material. Following the first year, I adopted an approach of setting SMART (S – specific, M – measurable, A – attainable, R – relevant, T – time-bound) goals and objectives and improved the communication with the students, which allowed me to show a significant increase in interest from the students.

CE 534 - STRUCTURAL DYNAMICS. In this course, I developed a traditional curriculum to teaching Structural Dynamics, following the first 13 chapters in Chopra’s “Dynamics of Structures” textbook. For this course I developed hand-written lecture notes, homework problems, and added new opportunities for experiential learning and cooperative learning, namely through development of laboratory experiments as well as exposure to basic skills of computer programming through the use of MATLAB. Topics covered in the course include: analytical and numerical solutions for single, multi-degree of freedom and continuous vibrating systems, behavior of structures, dynamic forces and support motions, and seismic response spectra analysis.

For CE 534, the lecture notes developed complement the textbook by providing in-depth and extended theoretical derivations of the lectured material. Experiential learning opportunities

are brought into this course through student exposure to several hands-on exercises in which they use an instructional shake-table to run a set of pre-defined experiments. In terms of creating a cooperative learning experience, students work in groups to apply methods and concepts learnt in the class to the observations from tests performed on the instructional shake-table. Since this course is intensive in terms of the mathematical preparation and background needed by students to succeed in the class, I work on explaining the physics behind the mathematical expressions, by bringing my industry experience to the classroom and presenting real life problems that relate to the mathematical problem under analysis. This approach has been very well received by the students. In terms of programming skills, Python and MATLAB are used as tools for developing solutions to homeworks and also in group projects. As many students have no experience with Python or MATLAB when reaching this class, a set of introductory slides to Python and MATLAB were developed.

CE 580 - PERFORMANCE BASED DESIGN (3 credits). This is a new course. For this course I developed a new set of slides and gathered literature from the state-of-practice to provide to the students, interesting and engaging, while sometime challenging material. The course addresses advanced seismic design of building and bridge systems with emphasis on structural reinforced-concrete building technology, analysis, performance-based design and nonlinear analysis response verification. Base isolation, self-centering rocking systems, and other emerging systems for design of earthquake resilient systems are also presented. The advanced topics in seismic design were presented by providing journal papers for students to review, while presenting lecture slides with the summary of the main concepts. Models and “toys” are used extensively to illustrate basic structural engineering desired mechanisms.

CE 588 - PROBABILITY-BASED ANALYSIS AND DESIGN (4 credits). This course focuses on providing students with an understanding of the types of uncertainty encountered in design of civil engineering systems. The main topics covered include: application of probability and statistics in the analysis and design of civil and mechanical engineering systems, probabilistic modeling of loading and resistance, and probability-based design criteria including load and resistance factor design. CE 588 also introduces students to modern methods of structural reliability analysis based on the theory of probability, including both theoretical and computational aspects of structural reliability analysis. Example applications are mainly geared towards structural mechanics, although other examples related to hydraulics, geotechnical, and transportation engineering are also provided. The students learn to derive probability distributions for functions of one or multiple random variables, perform a reliability analysis of an engineering system given the failure criterion and the distributions, and determine which random variables have the most significant influence on the failure of an engineering system.

This course was completely restructured. A book by Nowak and Collins (2014) was used as the reference textbook and all but one chapter were covered. A set of lecture notes were developed to explain the theory and expand on many theoretical derivations not developed in the book. Students were also strongly encouraged to read additional material from the literature of the field, which is vast, and a total of 10 book references were made available for the students on the Valley Library. Student assessment included 8 homeworks, a midterm, and a term project. Students were introduced to two open source finite element reliability software (FERUM and OpenSees), which were used for solving homework problems and final project. Development of both of these tools started at UC Berkeley, but have not gathered large number of contributors and users, which was the main reason for exposing students in this course to these tools, since it prepares students for industry in fields related to insurance engineering, while providing them with the knowledge for the next generation of civil and mechanical engineers.

B1.4. Team or Collaborative Efforts

CE 419 - CIVIL INFRASTRUCTURE DESIGN. This course provides the capstone design project experience exposing students to problems and issues similar to those encountered in the practice of civil engineering. In this course, I was one of 6 instructors. The hierarchy was that there was a lead instructor and the other five instructors advised different specialties. I advised the structural team members (30 students). This was taught in 2012, which was the last year that the course was administered in this format. For this course, the main goal for the structural team members was to develop the preliminary design of a sky bridge and multi-modal center (conceptual design of alternatives, design of a representative frame for gravity loads, determination of lateral loads, and some detailing). When needed, minimal lecture notes were provided to guide students on the design of components. The design the students did in this section had to be integrated with the other project elements and detailed in a final report. To aid with the organization of the students and to give them a real life project experience, weekly deliverables were defined, and these included written assignments. Because each team's projects were different, each assignment included formal letters of transmittal that briefly described the contents of the submittal. All submittals were written so that students could incorporate these easily into the final report. In addition, to introduce students to the concept of time management and book-keeping, students were required to keep track of their "timesheets" and presented those to other members of the team. A portfolio of the work submitted throughout the term was due in week 8.

B1.5. International Teaching

STRUCTURAL RELIABILITY AND RISK ANALYSIS, Universita La Sapienza, Rome, Italy (24 hours). This new course was presented in an "Advanced Summer Course." The objective of this course was to introduce students to modern methods of structural reliability analysis based on the theory of probability. The course covered both the theoretical and the computational aspects of structural reliability analysis. It also presents the formulation of probability-based or reliability-based design codes. A complete set of lecture slides and homeworks was developed for this intense 4 day (24 hour) course.

B2. Student and Participant Evaluations

Course No.	Term	Enroll-ment	# Re-spond-ing	Student Evaluation (#1/#2) *	Department Medians (#1/#2)*	Δ	Required /Elective
CE 534	Winter 2012	12	11	5.6/5.6	4.6/4.8	+1.0/+1.0	Elective
CE 419	Spring 2012	30	23	3.1/3.1	4.6/4.8	-1.5/-1.7	Required
CE 382	Winter 2013	108	53	4.0/4.2	4.5/4.6	-0.5/-0.4	Required
CE 580	Spring 2013	18	12	4.3/5.0	4.6/4.8	-0.3/+0.2	Elective
CE 534	Fall 2013	16	14	5.2/5.5	4.6/4.8	+0.6/+0.7	Elective
CE 382	Winter 2014	60	54	4.7/5.0	4.7/4.8	0.0/+0.2	Required
CE 588	Spring 2014	18	16	5.3/5.5	4.8/4.8	+0.5/+0.7	Elective
CE 534	Fall 2014	20	17	5.4/5.7	4.8/4.8	+0.6/+0.9	Elective
CE 382 (I)	Winter 2015	66	59	5.0/5.0	4.8/4.8	+0.2/+0.2	Required
CE 382 (II)	Winter 2015	29	23	5.5/5.5	4.8/4.8	+0.7/+0.7	Required
CE 580	Spring 2015	7	5	6.0/6.0	4.8/5.1	+1.2/+0.9	Elective
CE 588	Winter 2016	11	9	4.7/5.3	4.6/4.8	+0.1/+0.5	Elective
CE 580	Spring 2016	9	7	5.0/5.3	4.7/4.9	+0.3/+0.3	Elective
CE 382	Spring 2016	55	42	4.8 /5.0	4.7/4.9	+0.1/+0.1	Required

*#1 – Course as a whole / #2 – Instructor’s Contribution; Maximum score 6.0/6.0

B4. Advising**B4.1. Graduate Advisees – Completed**

Student	Degree	Thesis	Graduated
1. Yicheng Long	MS	Effect of Subduction Zone Earthquakes on SDOF Bridge Models	Spring 2013
2. Kyle Romney (<i>co-advised H. Ben Mason</i>)	MS	Soil-bridge Interaction during Long-Duration Earthquake Motions	Spring 2013
3. Garlan Ramadhan	MS	Seismic Performance of Diagrid Steel Structures Using Single and Double Friction Mass Dampers	Fall 2013
4. Jessica Cawley (<i>co-advised Harry Yeh</i>)	MS	Review of Guidelines for the Design of Tsunami Vertical Evacuation Buildings	Winter 2014
5. Anthonie Kramer (<i>co-advised Arijit Sinha</i>)	MS	Cross-Laminated Timber Engineering: Improvement and Application	Winter 2014
6. Timothy Link (<i>co-advised David Trejo</i>)	MS	Seismic Performance of Reinforced Concrete Bridge Columns Constructed with Grade 80 Reinforcement	Spring 2014
7. Trevor Carey (<i>co-advised H. Ben Mason</i>)	MS	Multi-hazard Framework and Analysis of Soil-bridge Systems: Long Duration Earthquake and Tsunami Loading	Summer 2014
8. Amrutha Das (<i>co-advised John Gambatese</i>)	MS	Risk and Reliability Associated with Use and Reuse of Vertical Formwork	Spring 2014
9. Drew Nielson (<i>co-advised David Trejo</i>)	MS	High-strength reinforcement for bridges	Spring 2015
10. Patrick Burns (<i>co-advised Michael Olsen</i>)	MS	Multi-objective Loss Assessment of Oregon Bridges Due to Cascading Seismic and Tsunami Hazards	Summer 2015
11. Syed Baqir Hussain	MS	Evaluation of seismic response directional combination rules for existing plan irregular reinforced concrete buildings	Summer 2016
12. Curtis Blank	MS	Performance Based Tests on Cross Laminated Timber - Concrete Composite Floor Panels	Summer 2016
13. Mackenzie Lostra (<i>co-advised C. Higgins</i>)	MS	Seismic Performance of Square Reinforced Concrete Columns Retrofitted with Titanium Alloy Bars	Summer 2016

B4.2. Graduate Advisees – Current

Student	Degree	Expected Graduation
1. Vahid Mahdavifar (<i>co-advised Arijit Sinha - WSE</i>)	Ph.D.	Winter 2017
2. Rajendra Soti	Ph.D.	Summer 2017
3. Andre Belejo	Ph.D.	Summer 2017
4. Mohammad Shafiqul Alam	Ph.D.	Fall 2017
5. Feras Khlef (<i>co-advised J. Ideker - CCE</i>)	Ph.D.	Spring 2018
6. Sharoo Shrestha (<i>co-advised C. Higgins - CCE</i>)	Ph.D.	Spring 2019
7. Mohammed Asaad	Ph.D.	Summer 2019
8. Mustafa Buniya	Ph.D.	Fall 2019
9. Zeyad Al-Sayhood (<i>co-advised M. Scott - CCE</i>)	Ph.D.	Winter 2020
10. Ignace Mugabo	Ph.D.	Summer 2020
11. Wennan Li (<i>co-advised with J. Liu - CCE</i>)	Ph.D.	Fall 2020

B4.3. Graduate Thesis or Project Committees**MEng Advisor:*****Graduated***

1. Matthew Kessler (Spring 2016)

Minor Professor or Committee Member:***Graduated***

1. Anthony Sorentino, MS, 2012
2. Kathryn Pfretzschner, MS, 2012
3. Anthony Hafner, MS, 2012
4. David Taylor, Undergraduate University Honors Thesis, 2012
5. Christina Garrett, Undergraduate University Honors Thesis, 2012
6. Therese Pflaum, MS, 2013
7. Nataliya Kozlova, M.Eng., 2013
8. Andrew Hanek, MS, 2014
9. Thanh Huynh, MS, 2016
10. Jonathan Knudtsen, MS, 2016
11. Benjamin Hunter, MS, 2016
12. William M. Short, MS, 2016
13. Wennan Li, MS, 2016
14. Hyounghsu Park, Ph.D., 2016
15. Kyle Sullivan, MS, 2017

Current

1. Jon Huffman, Ph.D. (Civil Engineering)
2. Lei Zhang, Ph.D. (Civil Engineering)
3. Qiang Li, Ph.D. (Civil Engineering)

Graduate Council Representative:

1. Brandon Massoni, MS, 2016 (Mechanical Engineering)
2. Mitchell Daniels, MS, 2016 (Mechanical Engineering)
3. Addison Wisthoff, MS, 2016 (Mechanical Engineering)
4. Robin Kiff, MS, 2016 (Mechanical Engineering)
5. Mitchell Colby, MS, 2013 (Mechanical Engineering)
6. Min Ye, MS, 2013 (Wood Science and Engineering)
7. Ryan Siegel, PhD, 2012 (Agricultural and Resource Economics)
8. Thomas J. Wright, MS, 2012 (Mechanical Engineering)
9. Stephen Sills, MS, 2012 (Mechanical Engineering)

B4.4. Undergraduate Research Assistants

1. Glen Galant (Winter 2017 – present)
2. Christopher Anderson (Fall 2016 – present)
3. Kirsten Fox (Summer 2016 – present)
4. Brad Taylor (Summer 2016 – present)
5. Elshae Tanimoto (Summer 2016 – present)
6. Lance Parson (Fall 2015 – present)
7. Amy McKee (Fall 2015)
8. Kyle Logan (Spring 2015 – Spring 2016)
9. Kaitlyn Dorr (Spring 2015)
10. Vandad Mazarei (Winter 2015 – Spring 2015)
11. Sam Gardner (Summer 2014 – Winter 2015)
12. Matthew Kessler (Winter 2014 – Winter 2015)
13. Paul Schroeder (Winter 2014 – Winter 2015)
14. Gabriel Asch (Winter 2014 – Winter 2015)
15. Kristina Milaj (Winter 2014)
16. Nicholas James Mc Elmurry (Fall 2013)
17. Huijing (Sheela) Wang (Fall 2013)
18. Cody Tibbits (Summer 2013 – Winter 2015)
19. Amy Kordosky (Winter 2013)
20. Anthonie Kramer (Spring – Summer 2012)

B4.5. Other Advising**Visiting Scholars**

1. Leonardo Rodrigues, Ph.D. student, University of Minho, Portugal (Winter & Spring 2017).
2. Gerald Jaho, MS Student, University of Genoa, Italy (Fall 2016 – Winter 2017).
3. Emanuele Aldo Mortola, MS Student, University of Genoa, Italy (Fall 2016 – Winter 2017).
4. Milena Massari, Ph.D. student, University of Bologna, Italy (Fall 2015 – Spring 2016)

5. Luís Miranda, Visiting Scholar, National Civil Engineering Laboratory (LNEC), Lisbon, Portugal (Fall 2014)
6. Filipe Ribeiro, Doctoral Student, Universidade Nova de Lisboa, Portugal (Spring 2013)

Co-advisor at other institutions (underway)

1. Leonardo Rodrigues, Ph.D. student, University of Minho, Portugal (2015 – present).
2. Milena Massari, Visiting Ph.D. student, University of Bologna, Italy (2014 – present)
3. Luís Miranda, Ph.D. Student, Nat. Civil Eng. Laboratory (LNEC), Portugal (2013 – present)

Co-advisor at other institutions (Completed thesis/dissertations)

1. Filipe Ribeiro, Ph.D., Universidade Nova de Lisboa, Portugal, 2016 (Universidade Nova de Lisboa, Portugal, January 2017, graduated)
2. Hanshun Yu, MS, Tufts University, (Sept. 2014 – September 2016, graduated)
3. Eliyar Asgarieh, Ph.D., Tufts University, (Sept. 2012 – Jan. 2015, graduated)
4. Ruben Rosario, M.S., Universidade Nova de Lisboa, Portugal (Mar. 2013 – Sept. 2014)
5. Filipe Ribeiro, MS, Universidade Nova de Lisboa, Portugal, 2012 (Currently Ph.D. student at University of Nottingham, UK and Universidade Nova de Lisboa, Portugal)
6. Khaled Mashfiq, MS, Sapienza University of Rome, Italy, 2012 (currently at United Nations)

Faculty co-Advisor, Earthquake Engineering Research Institute (EERI) student chapter, Winter 2015 - present. During this period the EERI student chapter is being revamped following 20 years of exemplary service of Dr. Thomas Miller as faculty advisor to the EERI Student Chapter. A student steering committee is being defined with undergraduate and graduate students, and a plan for the next year describing main goals and timelines is under development.

C. SCHOLARSHIP AND CREATIVE ACTIVITY

C1. Publications

(Underline denotes advised graduate student researcher)

C1.1. Refereed Books & Book Chapters

1. Bose, S., Nozari, A., Mohammadi, M., Stavridis, A., Moaveni, B., Wood, R., Gillins, D., **Barbosa, A.R.** (2016). Structural Assessment of a School Building in Sankhu, Nepal Damaged Due to Torsional Response During the 2015 Gorkha Earthquake. In: Pakzad S., Juan C. (eds) Dynamics of Civil Structures, Volume 2. Conference Proceedings of the Society for Experimental Mechanics Series. Springer, Cham
2. Yeh, H., **Barbosa, A.R.**, and Mason, B. (2015). Tsunamis Effects in Man-Made Environment. Book chapter, Pages 1-27, *Encyclopedia of Complexity and Systems Science*, Editor: Meyers, A.R., Springer Berlin Heidelberg ISBN: 978-3-642-27737-5, 10.1007/978-3-642-27737-5_623-1
3. Asgarieh, E., Moaveni, B., Nozari, A., **Barbosa, A.R.**, Chatzi, E. (2014). Nonlinear Identification of a Seven-story Shear Wall Building Based on Numerically Simulated Seismic Data. Fikret Necati Catbas (Ed.) - Dynamics of Civil Structures, Conference Proceedings of the Society for Experimental Mechanics Series, Springer International Series, Pp 245-254 doi: 10.1007/978-3-319-04546-7_28
4. Faggella, M., **Barbosa, A.R.**, Conte, J.P., Spacone, E., Restrepo, J.I. (2008). Probabilistic Seismic Response Sensitivity Analysis of 3D Nonlinear Model of R/C Building Structure.” E. Cosenza, G. Manfredi, G. Monti (eds) - Valutazione e riduzione della vulnerabilita sismica di edifici esistenti in concreto armado, 331-338, Polimetrica International Scientific Publisher Monza/Italy, ISBN: 8876991298, 9788876991295

C1.2.1 Refereed Journal Publications

1. **Barbosa, A.R.**, Trejo, D., Nielson, D. (2017). Effect of High Strength Steel on Shear Friction Behavior. *ASCE Journal of Bridge Engineering*, In Press.
2. Ribeiro, F., Neves, L., and **Barbosa, A.R.** (2017). Implementation and calibration of finite-length plastic hinge elements for use in seismic structural collapse analysis. *Journal of Earthquake Engineering*. In Press.
3. Li, Q., Stuedlein, A.W. and **Barbosa, A.R.** (2017). Torsional Load Transfer of Drilled Shaft Foundations. *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, In Press.
4. Yu, H., Mohammed M.A., Mohammadi, M.E., Moaveni, B., **Barbosa A.R.**, Stavridis, A., Wood, R.L. (2017). Structural Identification of an 18-Story RC Building in Nepal Using Post-Earthquake Ambient Vibration and Lidar Data. *Front. Built Environ.* 3:11.doi: 10.3389/fbuil.2017.00011.
5. Park, H., Cox, D., **Barbosa, A.R.** (2017). Comparison of Inundation Depth and Momentum Flux Based Fragilities for Probabilistic Tsunami Damage Assessment and Uncertainty Analysis. *Coastal Engineering* Vol 122, 10-24, doi: 10.1016/j.coastaleng.2017.01.008
6. **Barbosa, A.**, Ribeiro, F., and Neves, L. (2017). Influence of Earthquake Ground-Motion Duration on Damage Estimation: Application to Steel Moment Resisting Frames. *Earthquake Engineering & Structural Dynamics* Volume 46, 1, 27–49, doi: 10.1002/eqe.2769
7. Asgarieh, E., Moaveni, B., **Barbosa, A.R.**, Chatzi, E. (2016). Nonlinear Model Calibration of a Shear Wall Building Using Time and Frequency Data Features. *Mechanical Systems and Signal Processing* doi: 10.1016/j.ymssp.2016.07.045

8. Attary, N., van de Lindt, J.W., Unnikrishnan, V.U., **Barbosa, A. R.**, and Cox, D.T. (2016) Methodology for Development of Physics-Based Tsunami Fragilities. *ASCE Journal of Structural Engineering*. doi: 10.1061/(ASCE)ST.1943-541X.0001715, In Press.
9. Gidaris, I., Padgett, J., **Barbosa, A.R.**, Chen, S., Cox, D. Webb, B., Cerato, A. (2016). Multiple-Hazard Fragility and Restoration Models of Highway Bridges for Regional Risk and Resilience Assessment in the U.S.: A State-of-the-art Review. *ASCE Journal of Structural Engineering*. 10.1061/(ASCE)ST.1943-541X.0001672
10. Trejo, D., Link, T., **Barbosa, A. R.** (2016). Effect of Reinforcement Grade and Ratio on Seismic Performance of RC Columns. *ACI Structural Journal*, Vol. 113, 05, 907-916
11. Kramer, A., **Barbosa, A.**, and Sinha, A. (2015). Performance of Steel Energy Dissipators Connected to Cross-Laminated Timber Wall Panels Subjected to Tension and Cyclic Loading. *ASCE J. Struct. Eng.*, 10.1061/(ASCE)ST.1943-541X.0001410 , E4015013.
12. **Barbosa, A. R.**, Link, T., Trejo, D. (2015). Seismic Performance of High-Strength Steel RC Bridge Columns. *ASCE J. Bridge Eng.*, 10.1061/(ASCE)BE.1943-5592.0000769
13. Ribeiro, F.L.A., **Barbosa, A.R.**, Scott, M.H., and Neves, L.A.C. (2015). Deterioration Modeling of Steel Moment Resisting Frames Using Finite-Length Plastic Hinge Force-Based Beam-Column Elements. *ASCE Journal of Structural Engineering*, 141(2), doi: 10.1061/(ASCE)ST.1943-541X.0001052, 04014112.
14. **Barbosa, A. R.**, and Ramadhan, G. (2014). Seismic Performance of a Tall Diagrid Steel Building with Tuned Mass Dampers. *International Journal of Innovations in Materials Science and Engineering*, Vol. 1, (2), IMSE (1712-7882)
15. Ribeiro, F. L.A., **Barbosa, A.R.**, and Neves, L.A.C. (2014). Application of Reliability-Based Robustness Assessment of Steel Moment Resisting Frame Structures under Post-Mainshock Cascading Events. *ASCE Journal of Structural Engineering*. 140, Special Issue: Computational Simulation in Structural Engineering, A4014008
16. Kramer, A., **Barbosa, A.R.**, and Sinha, A. (2014). Viability of Hybrid Poplar in ANSI Approved Cross-Laminated Timber Applications. *ASCE Journal of Materials in Civil Engineering*, 26(7), 06014009, doi: 10.1061/(ASCE)MT.1943-5533.0000936
17. Moaveni, B., **Barbosa, A.R.**, Conte, J. P., and Hemez, F. M. (2014). Uncertainty analysis of system identification results obtained for a seven-story building slice tested on the UCSD-NEES shake table. *Structural Control and Health Monitoring*, 21(4), 466-483, doi: 10.1002/stc.1577
18. Faggella, M., **Barbosa, A.R.**, Conte, J. P., Spacone, E., and Restrepo, J. I. (2013). Probabilistic seismic response analysis of a 3-D reinforced concrete building. *Structural Safety*, 44, 11-27.
19. Pestana, A., Alves, T., and **Barbosa, A.R.** (2013). Application of Lean Construction Concepts to Manage the Submittal Process in AEC Projects. *ASCE J. Manage. Eng.*, doi: 10.1061/(ASCE)ME.1943-5479.
20. Castro, L.M.S.S. and **Barbosa, A. R.** (2006). Implementation of a Hybrid-Mixed Stress Model based on the use of Wavelets. *Computers and Structures*, Vol.84, 10-11, p718-731, doi: 10.1016/j.compstruc.2005.11.012

C1.2.2 Refereed Journal Publications Currently Under Review

1. **Alam, M.S., Barbosa, A.R.,** Scott, M.H., Cox, D., van de Lindt, J.W. (2017). Development of Physics-based Tsunami Fragility Functions considering Structural Member Failures”, ASCE Journal of Structural Engineering (*Submitted January 2017*).
2. **Belejo, A., Barbosa, A.R.,** Bento, R. (2017). Influence of Ground Motion Duration on Damage Index-Based Fragility Assessment of a Plan-Asymmetric Non-Ductile Reinforced Concrete Building, Engineering Structures (*Submitted July 2016; Accepted pending revisions; revisions to be submitted March 2017*)
3. **Burns, P., Barbosa, A.R.,** Olsen, M., Wang, H. (2017). Multi-hazard Damage and Loss Assessment of a Highway Bridge Network Subjected to Earthquake and Tsunami Hazards (*Accepted pending revisions; revisions submitted in November 2016*)
4. Attary, N., Unnikrishnan, V.U., van de Lindt, J.W., Cox, D.T., and **Barbosa, A. R.** (2017). Performance-Based Tsunami Engineering Methodology for Risk Assessment of Structures, Engineering Structures (*Submitted July 2016*).
5. **Barbosa, A.R.,** Trejo, D., **Nielson, D.** (2017). Performance of Shear Specimens Reinforced with High Strength Reinforcing Bars, ACI Structural Journal (*Accepted pending revisions; revisions submitted September 2016*)
6. **Barbosa, A.R.,** Mason, H.B., **Soti, R.** (2017). The 2014 South Napa, California Earthquake: Performance and Restoration Times of Unreinforced Masonry Buildings (*Accepted pending revisions; revisions to be submitted March 2017*)

C1.3. Peer-Reviewed Archival Conference Publications

1. Wood, R. L., Mohammadi, M.E., **Barbosa, A.R.,** Kawan, C.K., Shakya, M., Olsen, M.J. (2017). Structural Damage Assessment of a Five-Tiered Pagoda Style Temple in Nepal. Proceedings of the 16th World Conference on Earthquake Engineering (16WCEE), Santiago, Chile, Paper No. 2915, 12pp.
2. Yu, H., Levine, A., Van Oss, T., Mohammed, M., Moaveni, B., **Barbosa, A.R.,** Stavridis, A. (2017). System Identification and Modeling of an 18-Story Building in Nepal Using Post-Earthquake Ambient Vibration Data. Proceedings of the 16th World Conference on Earthquake Engineering (16WCEE), Santiago, Chile, 12pp.
3. Miranda, L., **Barbosa, A.R.,** Serra, J., Caldeira, L. (2017) Parameter Sensitivity Analysis of the Manzari-Dafalias Model for Modeling the Cyclic Response of a Sand. Proceedings of the 16th World Conference on Earthquake Engineering (16WCEE), Santiago, Chile, 12pp.
4. Sa, P., Rodrigues, H., Furtado, A.F., Varum, H., Vila-Pouca, N., **Barbosa, A.R.** (2016). Evaluation of the Seismic Vulnerability of a School Building in Nepal – Proposal for Retrofit Solutions (in Portuguese), Betão Estrutural 2016, at Coimbra, Portugal, November, 2016.
5. Sa, P., Rodrigues, H., Furtado, A.F., Varum, H., Vila-Pouca, N., **Barbosa, A.R.** (2016). Numerical Study on the Seismic Vulnerability of a School Building with a Proposed Retrofit Solution (in Portuguese), Conference: XII International Conference on Structural Repair and Rehabilitation, Porto, Portugal, October, 2016.
6. Lostra, M., Higgins, C., Barbosa, A.R. (2016). Seismic Retrofit of Reinforced Concrete Rectangular Bridge Columns Using Titanium Alloy Bars. Conference: XII International Conference on Structural Repair and Rehabilitation, Porto, Portugal, October, 2016.

7. Mahdavifar, V., **Barbosa, A.R.**, Sinha, A. (2016). Nonlinear Layered Modeling Approach for Cross Laminated Timber Panels Subjected to Out-of-Plane Loading. Conference: 41st IAHS World Congress on Sustainability and Innovation for the Future, Albufeira, Algarve, Portugal, September 2016.
8. Mahdavifar, V., **Barbosa, A.R.**, Sinha, A., Gupta, R., Muszyński, L. (2016). Hysteretic behavior of metal connectors for hybrid (high- and low-grade mixed species) cross-laminated timber, In 2016 World Conference of Timber Engineering, Vienna, Austria, September 2016.
9. Varum, H., Pouca, N., Rodrigues, H., Furtado, A., Oliveira, J., Arêde, A., **Barbosa, A.** (2016) Infilled RC Structures Performance in the 25th April, 2015 Gorkha Nepal Earthquake: Observations and Dynamic Characterization Tests, IBMAC 16th International Brick and Block Masonry Conference, Padova, Italy, on June 26-30 2016
10. Varum, H., Arêde, A., Rodrigues, H., Pouca, N.V., Oliveira, J., Furtado, A., **Barbosa, A.** (2016) Earthquake in Nepal 2015: Lessons Learnt from the Behavior and Damage Observed in Buildings. Congreso Euro - Americano Rehabend 2016, Patología de la Construcción, Tecnología de la Rehabilitación y Gestión del Patrimonio, Burgos, Spain, May 2016.
11. Ribeiro, F., **Barbosa, A.R.**, Neves, L. (2016). Fragility and Loss Assessment of Pre-Northridge Steel Moment Frames Using the Opensees Framework. 10º National Congress of Seismology and Earthquake Engineering, Portugal, April 2016.
12. Ribeiro, F., Rosario, R., **Barbosa, A.R.**, Neves, L. (2016). Sensitivity Analysis of Steel Moment Frames Subjected to Structural Fire Using the Opensees Framework. 10º National Congress of Seismology and Earthquake Engineering, Portugal, April 2016.
13. Varum, H., **Barbosa, A.R.**, Arede, A., Pouca, N., Rodrigues, H., Furtado, A., Mário, J. (2016) April 2015 Gorkha earthquake in Nepal: field observations. 10º National Congress of Seismology and Earthquake Engineering, Portugal, April 2016.
14. Bose, S., Nozari, A., Mohammadi, M., Stavridis, A., Moaveni, B., Wood, R., Gillins, D., **Barbosa, A.R.** (2016) "Structural Assessment of a School Building in Sankhu, Nepal Damaged Due to Torsional Response During the 2015 Gorkha Earthquake." IMAC XXXIV A Conference and Exposition on Structural Dynamics, Orlando, FL, January, 12pp.
15. Brando G., Rapone, D., Spacone, E., **Barbosa, A.R.**, Olsen, M., Gillins, D., Soti, R., Varum, H., Arede, A., Vila-Pouca, N., Furtado, A., Oliveira, J., Rodrigues, H., Stavridis, A., Bose, S., Fagella, M., Gigliotti, R., Wood, R.(2015). "Reconnaissance report on the 2015 Gorkha Earthquake effects in Nepal." XVI Convegno Anidid, L'Aquila, Italy.
16. Yeh, H. **Barbosa, A.R.**, Ko, H., and Cawley, J. (2014). Tsunami Loadings on Structures: Review and Analysis. *Coastal Engineering Proceedings, 1(34)*, currents.4. In: *International Conference of Coastal Engineering*, Seoul, Korea
17. **Barbosa, A.R.**, Gambatese, J., Das, A., Pestana, A.C. (2014). Mapped Workflow for Safety and Reliability Assessments of Use and Re-use of Formwork. *Construction Research Congress 2014*: pp. 1821-1830. doi: 10.1061/9780784413517.186
18. **Barbosa, A. R.**, Ribeiro, F.L.A., Neves, L.C.A. (2014). Effects of Earthquake Ground-motion Duration on the Response of a 9-story Steel Moment Resisting Frame. In *Proceedings of the Tenth National Conference on Earthquake Engineering*. Anchorage, Alaska.
19. Ramadhan, G., **Barbosa, A. R.** (2014). Improving the Seismic Performance of Diagrid Steel Structures using Friction Mass Dampers. In *Proceedings of the Tenth National Conference on Earthquake Engineering*. Anchorage, Alaska.

20. 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.
21. 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.
22. Soti, R., **Barbosa, A. R.**, and Stavridis, A. (2014). Numerical Modeling of URM Infill Walls Retrofitted with Embedded Reinforcing Steel, In *Proceedings of the Tenth National Conference on Earthquake Engineering*. Anchorage, Alaska.
23. Asgarieh, E., Moaveni, B., Nozari, A., **Barbosa, A.R.**, Chatzi, E. (2014). Nonlinear Identification of a Seven-story Shear Wall Building Based on Numerically Simulated Seismic Data, *Proceedings of the IMAC XXXII, A Conference and Exposition on Structural Dynamics*, 3-6 February, 2014, Florida USA, Society for Experimental Mechanics.
24. Ribeiro, F.L.A., **Barbosa, A.R.**, and Neves, L.A.C. (2013). Reliability-Based Robustness Assessment of Structures Subjected to Post-Mainshock Hazard Events. In *11th International Conference on Structural Safety & Reliability (ICOSSAR)*. New York, U.S.A. June 2013
25. **Barbosa, A.R.**, Neves, L.A.C. and Ribeiro, F.L.A. (2012). Preliminary Proposal for Performance-Based Structural Engineering for Fire Following Earthquake. In *First International Conference on Performance-Based and Life-Cycle Structural Engineering (PLSE 2012)*, December, Hong Kong, China
26. Faggella, M., **Barbosa, A. R.**, Conte, J. P., Spacone, E, and Restrepo, J.I. (2009). Use of High Performance Computing for Probabilistic Seismic Response Sensitivity Analyses of a Building Structure. In *Proceedings of the First International Conference on Parallel, Distributed and Grid Computing for Engineering*, B.H.V. Topping, P.Iványi, (Editors), Civil-Comp Press, Stirlingshire, UK, Paper 28, 2009. doi:10.4203/ccp.90.
27. **Barbosa, A. R.**, Panagiotou, M., Conte, J.P., and Restrepo, J.I., (2009). Comparison of Dynamic Strut-and Tie and Fiber Beam-Column Models for the UCSD Seven-Story Full-scale Building Slice Test. In *Proceedings of the Sixth International Conference on Urban Earthquake Engineering (CUEE 2009)*, Tokyo, Japan
28. Moaveni, B., **Barbosa, A.R.**, Panagiotou, M., Conte, J.P., and Restrepo, J.I. (2009). Uncertainty Analysis of Identified Damping Ratios in Nonlinear Dynamic Systems. In *Proceedings of the 27th International Modal Analysis Conference (IMAC-XXVII)*, Orlando, Florida, USA, February 2009. Society for Experimental Mechanics.
29. Faggella, M., **Barbosa, A.R.**, Conte, J. P., Spacone, E, and Restrepo, J.I. (2008). Seismic Assessment of R/C Building Structure through Nonlinear Probabilistic Analysis with High-performance Computing. In *MERCEA08, Seismic Engineering International Conference*, July, Reggio Calabria, Italy.
30. **Barbosa, A.R.** and Silva, M.A.G. (2007). Bridge Abutment Interaction under Seismic Loading. In *2nd International Conference on Structural Condition Assessment, Monitoring and Improvement (SCAMI-2)*, 19-21 November, Changsha, China.
31. **Barbosa, A.R.**, Caldeira, L., and Silva, M.A.G. (2007). Modelação Numérica de Pontes Incluindo Interação Encontro-Superestrutura. In *Proceedings 7º Congresso de Sismologia e Engenharia Sísmica*, Porto, Portugal

32. Moaveni, B., **Barbosa, A.R.**, Conte, J. P., and Hemez, F. M. (2007). Uncertainty Analysis of Modal Parameters Obtained From Three System Identification Methods. In *Proceedings of the 25th International Modal Analysis Conference (IMAC-XXV)*, Society for Experimental Mechanics, Orlando, Florida, USA
33. Silva, M., **Barbosa, A.R.**, Pereira, E., Castro. L. (2005). Utilização de um Modelo Híbrido-Misto na Análise Dinâmica de Estruturas Reticuladas Planas. *Métodos Numéricos en Ingeniería*, Granada, Spain
34. Castro, L.M.S.S. and **Barbosa, A.R.** (2003). Implementation of a Hybrid-Mixed Stress Model Based on the Use of Wavelets. In *IX International Conference on Civil and Structural Engineering Computing, CC2003 (Civil-Comp press)*, paper 41, Egmond an Zee, August

C1.4. Other Peer-Reviewed Publications

The following papers appeared in proceedings that were distributed primarily to attendees (as CDs, printed volumes, availability through a public website, etc.).

1. Kramer, A.K., Sinha, A., **Barbosa, A.R.** (2014). Cross-Laminated Timber Panels Using Hybrid Poplar. In *Proceedings (Abstracts) of the 57th International Convention of Society of Wood Science and Technology* June 23-27, 2014 - Zvolen, SLOVAKIA
2. Ribeiro, F.L.A., **Barbosa, A.R.**, and Neves, L.A.C. (2012). Robustness Assessment for Consecutive Seismic Events. In *4º Encontro Nacional de Risco, Seguranca e Fiabilidade, IST*, Lisboa, Portugal.
3. Ribeiro, F.L.A., **Barbosa, A.R.**, and Neves, L.A.C. (2012). Seismic Robustness Assessment of Code Compliant Steel Moment Resisting Frame under Seismic Triggered Sequences of Events. In *Proceedings of 15th World Congress on Earthquake Engineering (15WCEE)*, Lisbon, Portugal.
4. Conte, J. P., Moaveni, B., He, X., and **Barbosa, A.R.** (2009). System and Damage Identification Studies of a Seven-Story Reinforced Concrete Building Structure Subjected to Shake Table Tests. In *Proc. (Abstracts) of the 2nd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009)*, Rhodes, Greece, June 22-24, 2009.
5. Castro, L.M.S.S. and **Barbosa, A.R.** (2003). Resolução de Problemas de Elasticidade com Wavelets no Intervalo. VII Encontro Nacional de Mecânica Aplicada e Computacional, Évora

C2. Professional Meetings, Symposia, and Conferences

C2.1. Presentations to Professional Groups (includes presentations of papers cited in C1.3)

1. Contributed Talk, “Seismic Performance of Square Reinforced Concrete Columns Retrofitted with Titanium Alloy Bars,” CINPAR 2016, XII International Conference on Structural Repair and Rehabilitation, Porto, Portugal
2. Invited Talk, “Cost-effective Retrofitting of Unreinforced Masonry Walls,” Cascadia Lifelines Program – Meeting with DOGAMI, September 26, 2016
3. Contributed Talk, “Nonlinear Layered Modeling Approach for Cross Laminated Timber Panels Subjected To Out-Of-Plane Loading.” 41st IAHS World Congress on Sustainability and Innovation for the Future, Albufeira, Algarve, Portugal, 13-16th September 2016
4. Contributed Talk, “Hysteretic Behavior of Metal Connectors for Hybrid (High- and Low-grade Mixed Species) Cross Laminated Timber,” 2016 WCTE World Conference in Timber

- Engineering, Vienna, Austria, August 25, 2016 (presented by Ph.D. student Vahid Mahdavifar)
5. Contributed Talk, “Seismic Robustness and Resilience of Existing Built Environment,” 2016 Engineering Short Course on Cascadia Resilience, Corvallis, OR, July 14, 2016
 6. Contributed Talk, “Multi-Hazard Damage and Loss Estimates to Buildings and Lifelines,” 2016 Summer REU Program Kick-off Workshop, Corvallis, OR, June 20, 2016
 7. Contributed Talk, “Full Scale Response and Numerical Simulation of Traffic Sign and Signal Foundations Subjected to Torsional (Wind) Loading,” 2016 ADSC Faculty Workshop, Chattanooga, TN, June 8, 2016 (presented by Armin Stuedlein)
 8. Contributed Talk, “Structural Identification and Modeling of a Three-Story School Building Damaged During the 2015 Gorkha Earthquake,” EMI 2016, Engineering Mechanics Institute Conference, May 22-25, 2016, Nashville, TN
 9. Contributed Talk, “Modeling Infill Strut Model Class Uncertainty on Seismic Response of Reinforced Concrete Masonry Infilled Frames,” EMI 2016, Engineering Mechanics Institute Conference, May 22-25, 2016, Nashville, TN (presented by Ph.D. student M. Shafiqul Alam)
 10. Contributed Talk, “Composite Timber Structures.” Mass-timber Conference, Portland, Oregon, March 23, 2016 (presented by Benton Johnson, SOM)
 11. Contributed Talk, “Full Scale Response and Numerical Simulation of Traffic Sign and Signal Foundations Subjected to Torsional (Wind) Loading,” 2016 Northwest Transportation Conference, Corvallis, OR, March 16, 2016 (presented by Armin Stuedlein)
 12. Contributed Talk, “Engineering Resilient Coastal Communities,” Meeting on Opportunities for University of Hawaii – Oregon State University Collaborations, Corvallis, OR, February 18, 2016
 13. Contributed Talk, “Soil-Bridge Modeling in OpenSees Considering Long Duration Earthquake Motions and Soil Liquefaction” Geo-Structures 2016, Geotechnical & Structural Engineering Congress, Phoenix, AZ, February 14-17, 2016 (presented by Ben Mason)
 14. Invited Panelist, Post-Earthquake Reconnaissance Findings From The M7.8 Gorkha Earthquake, Presentation on Remote sensing and laser scanning by Daniel Gillins, Geo-Structures 2016, Geotechnical & Structural Engineering Congress, Phoenix, AZ, February 14-17, 2016
 15. Contributed Talk, “Simulation Framework for Reliability-based Serviceability Assessments of Multi-story Steel-framed Structures Supported on Spatially-variable Soil,” Geo-Structures 2016, Geotechnical & Structural Engineering Congress, Phoenix, AZ, February 14-17, 2016 (presented by Armin Stuedlein)
 16. Invited Talk, *DCA Meeting at the City of Corvallis*, Lessons Learnt from Recent Earthquakes and Implications for Oregon, Oregon State University and Corvallis Seismic Strategies, February 3, 2016
 17. Contributed Talk, *ATC-SEI Conference*, “Performance of URM walls and infilled RC frame retrofitted with near surface mounted steel bars.”, 2nd Conference on Improving The Seismic Performance of Existing Buildings and Other Structures, December 10-12, 2015, San Francisco, California
 18. Invited Talk, *Mayor of City of Corvallis*, Lessons Learnt from Recent Earthquakes and Implications for Oregon, Oregon State University and Corvallis Seismic Strategies, October 27, 2015

19. Invited Talk, *Special Seminar on Earthquake and Tsunami Loss Assessment*, Oregon State University, October 27, 2015
20. Invited Talk, *WTS October Luncheon: Emergency Preparedness - Are We Ready?*, Earthquake Preparedness: Lessons Learnt from Recent Earthquakes and Implications for Oregon, October 13, 2015
21. Contributed Talk, *Cascadia Lifelines Program*, Cost-effective Improvements in Seismic Performance of Legacy Infrastructure, Portland, Oregon, October 8, 2015
22. Invited Talk, *Eugene Country Club*, Earthquake Preparedness: Lessons Learnt from Recent Earthquakes and Implications for Oregon, September 29, 2015
23. Contributed Talk, *Center for Risk-based Community Resilience Planning*, “Multi-Hazard Damage and Loss Estimation: Application to Seaside, OR,” NIST CORE Meeting Portland, OR, September 18, 2015
24. Invited Talk, *Corvallis Seismic Strategies*, 2014 Napa, California and 2015 Nepal Earthquake: Overview of Observations and Implications for Oregon, September 9, 2015
25. Invited Talk, *UC Berkeley, Berkeley, CA*, Performance of Structures and Data Collection. PEER/EERI/GEER Reconnaissance Briefing on the April 2015 Gorkha (Nepal) Earthquake (*presentation slides and video copy available online – attended by 80 in-room participants and more than 600 participants online live*)
26. Invited Talk, *National Science for Earthquake Technology – Nepal*, **Barbosa, A.R.**, Wood, R., Gillins, D., Faggella, M., Rodrigues, H. (2015). NSF RAPID/NSET Field Work Closing Seminar, July 2, 2015, Kathmandu, Nepal
27. Invited Talk, *10th Annual Energy & Construction Best Practices Summit - Clean Tech. - Washington's WISE Future*, Tacoma, WA, Designing for Resilience in the Pacific Northwest, May 29, 2015.
28. Invited Talk, *The American Society of Safety Engineers Oregon Resilience Plan and Current Status of the Implementation Task Force*, Eugene, OR, May 19 2015, Presentation on the Oregon Resilience Plan and Current Status of the Implementation Task Force at the Monthly Meeting of the Cascade Chapter of The American Society of Safety Engineers
29. Invited Talk, *American Wood Council*, Hybrid CLT Project. AWC Meeting in Portland, Oregon, April 21, 2015
30. Invited Talk, *EERI 2015 Annual Meeting*, **Barbosa, A.**, Olsen, M., Burns, P., Veletzos, M., Chen, Z., Roe, G., Tabrizi, K. (2015). Review of Post-hazard event Safety Evaluation Procedures for Civil Infrastructure. Invited Presentation, EERI 2015 Annual Meeting, Boston, February, 2015
31. Poster, *EERI 2015 Annual Meeting*, Burns, P., **Barbosa, A.R.**, Olsen, M. Multi-Objective Loss Assessment of Oregon Bridges due to Seismic Hazards, Poster, EERI 2015 Annual Meeting, Boston, February, 2015
32. Attended Seminar, *University of Utah, Salt Lake City, UT*. “Idaho National Laboratory MOOSE Workshop.” January 2015
33. Invited Talk, *UC Berkeley, Berkeley, CA* “EERI-PEER Reconnaissance Briefing on the August 24, 2014 South Napa Earthquake.” September 15, 2014. (*presentation slides and video copy available online – attended by 80 in-room participants and more than 1,100 participants online live*)

34. Invited Talk, *Lane County Utilities Coordinating Council, Springfield, Oregon*. “Lessons Learned from Recent Earthquakes: Implications for Oregon.” November 2014. (*presented to 40 members of the LCUCC monthly lunch meeting*)
35. Invited Talk, *NEES Quake Summit Anchorage, Alaska*. “Integration of Simulation Data Within the NEES Project Warehouse – NEES Research.” July 2014. (*closing session of NEES Quake Summit – attended by 20 people*)
36. Contributed Talk, *10th National Conference on Earthquake Engineering, Anchorage, Alaska*. “Effects of Earthquake Ground-motion Duration on the Response of a 9-story Steel Moment Resisting Frame.” July 2014.
37. Contributed Talk, *10th National Conference on Earthquake Engineering, Anchorage, Alaska*. “Developing a soil bridge-interaction model for studying the effects of long-duration earthquake motions.” July 2014.
38. Contributed Talk, *10th National Conference on Earthquake Engineering, Anchorage, Alaska*. “Numerical Modeling of URM Infill Walls Retrofitted with Embedded Reinforcing Steel.” July 2014.
39. Contributed Talk, *International Conference on Coastal Engineering, Seoul, Korea*. “Tsunami Loadings on Structures: Review and Analysis.” July 2014.
40. Contributed Talk, *International Society of Wood Science & Technology (SWST), Technical University in Zvolen, Slovakia*. “Cross Laminated Timber Panels Using Hybrid Poplar.” June 2014.
41. Contributed Talk, *IMAC XXXII, A Conference and Exposition on Structural Dynamics, Orlando, FL*. “Nonlinear Identification of a Seven-story Shear Wall Building Based on Numerically Simulated Seismic Data.” February 2014.
42. Poster Presentation, Hybrid CLT panels for sustainable building solutions. OSU CCE/MIME Graduate Research Exposition, March 6, 2014, Portland, OR (*awarded First Place*)
43. Poster Presentation, Manufacturing hybrid Cross Laminated Timber (CLT) panels. OSU CCE/MIME Graduate Research Exposition, March 6, 2014, Portland, OR
44. Invited Talk, *NEES Quake Summit, Reno, Nevada*. “NEES/OSG: Experiences in the use of “opportunistic” computing resources.” August 2013. (*attended by 20 people*)
45. Invited Talk, *OpenSees Days 2013 at UC Berkeley, Berkeley, CA*. “Modeling of Frame Structures in Fire.” August 2013. (*attended by 20 people live, YouTube video has been seen by 280+ viewers*)
46. Contributed Talk, *11th International Conference on Structural Safety & Reliability, ICOSSAR 2013*. “Reliability-Based Robustness Assessment of Structures Subjected to Post-Mainshock Hazard Events.” June 2013.
47. Contributed Talk, *First International Conference on Performance-Based and Life-Cycle Structural Engineering (PLSE 2012)*. “Preliminary Proposal for Performance-Based Structural Engineering for Fire Following Earthquake.” December 2012.
48. Contributed Talk, *15th World Congress on Earthquake Engineering (15WCEE), Lisbon, Portugal*. “Seismic Robustness Assessment of Code Compliant Steel Moment Resisting Frame under Seismic Triggered Sequences of Events.” September 2012.
49. Invited Talk, *UC Berkeley, PEER Annual Meeting, Berkeley, CA*. “Vector-valued Probabilistic Seismic Hazard Analysis and Probabilistic Seismic Demand Analysis Application to the 13-story NEHRP Reinforced Concrete Frame-Wall Building Design Example.” August 2012.

50. Contributed Talk, *2012 Joint Conference of the Engineering Mechanics Institute and the 11th ASCE Joint Specialty Conference on Probabilistic Mechanics and Structural Reliability*. “Identifying the Hysteretic Models of Structural Elements using Instantaneous Modal Parameters.” June 2012
51. Invited Talk, *PEER Annual Meeting, Berkeley, UC Berkeley, CA*. “High Fidelity” Nonlinear Building Simulation and Use of Open Science Grid, July 2011.
52. Contributed Talk, *First International Conference on Parallel, Distributed and Grid Computing for Engineering*. “Use of High Performance Computing for Probabilistic Seismic Response Sensitivity Analyses of a Building Structure.” June 2009.
53. Invited Talk, *Sixth International Conference on Urban Earthquake Engineering (CUEE 2009)*. “Comparison of Dynamic Strut-and Tie and Fiber Beam-Column Models for the UCSD Seven-Story Full-scale Building Slice Test.” March 2009.
54. Contributed Talk, *27th International Modal Analysis Conference (IMAC-XXVII)*. “Uncertainty Analysis of Identified Damping Ratios in Nonlinear Dynamic Systems.” February 2009.
55. Keynote talk, *2nd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2009)*. “System and Damage Identification Studies of a Seven-Story Reinforced Concrete Building Structure Subjected to Shake Table Tests.” June 2009.
56. Contributed Talk, *MERCEA08, Seismic Engineering International Conference, Italy*. “Seismic Assessment of R/C Building Structure through Nonlinear Probabilistic Analysis with High-performance Computing.” July 2008.
57. Contributed Talk, *Valutazione e Riduzione della Vulnerabilità Sismica di Edifici in Cemento Armato, Rome, Italy*. “Probabilistic Seismic Response Sensitivity Analysis of a 3-D Nonlinear Model of a Building Structure.” May 2008.
58. Contributed Talk, *2nd International Conference on Structural Condition Assessment, Monitoring and Improvement (SCAMI-2)*. “Bridge Abutment Interaction under Seismic Loading.” November 2007
59. Contributed Talk, *7º Congresso de Sismologia e Engenharia Sísmica, Porto, Portugal*. “Modelação Numérica de Pontes Incluindo Interação Encontro-Superestrutura.” September 2007
60. Contributed Talk, *25th International Modal Analysis Conference (IMAC-XXV)*. “Uncertainty Analysis of Modal Parameters Obtained from Three System Identification Methods.” Feb. 2007.
61. Contributed Talk, *Métodos Numéricos en Ingeniería, Granada, Spain*, “Utilização de um Modelo Híbrido-Misto na Análise Dinâmica de Estruturas Reticuladas Planas.” June 2005.
62. Contributed Talk, *IX International Conference on Civil and Structural Engineering Computing, CC2003 (Civil-Comp press)*. “Implementation of a Hybrid-Mixed Stress Model Based on the Use of Wavelets.” June 2003.

C2.2. Participation at Invitational Workshops

1. Keynote Talk, *University of Porto, Portugal*, “Dynamic Analysis with Examples – Seismic and Tsunami Loadings.” Workshop on Multi-Hazard Analysis of Structures using OpenSees, July 2014
2. Keynote Talk, *University of Porto, Portugal*, “Uncertainty and Sensitivity Analysis using High-throughput Computing (HTC) and High-performance Computing (HPC).” Workshop on Multi-Hazard Analysis of Structures using OpenSees, July 2014

C3. Grant and Contract Support

<i>Agency & Dates</i>	<i>PI (and coPIs)</i>	<i>Title</i>	<i>Total Budget</i>	<i>My Share</i>
Oregon DOT 1/17 – 2/19	Barbosa, A. R. , Trejo, D.	Effect of High-Strength Steel Reinforcement in Shear Friction Applications (stage 2)	\$400,000	\$200,000
USDA Framework Project / KPFF 7/16 – 3/17	Barbosa, A. R. , Sinha, A., Higgins, C.	CLT Structural Testing for the Framework Project	\$109,224	\$36,408
USDA Agricultural Research Service 7/16 – 6/19	Riggio, M., Barbosa, A. R. , Van Den Wymelenberg, K.	SMART-CLT – “Structural Health Monitoring and Post-Occupancy Performance of Mass Timber Buildings.”	\$147,497	\$36,874
Oregon DOT 1/16 – 12/17	Higgins, C., Barbosa, A.R.	Development of Titanium Seismic Retrofits for Deficient Concrete Columns	\$400,000	\$200,000
Skidmore, Owings & Merrill, SOM 10/15 – 9/16	Barbosa, A. R. , Higgins, C.	Composite Long-span Mass-timber Floor System for Building Applications	\$48,000	\$24,000
NSF ENH 7/2015 – 6/2016	Barbosa, A. R. , Olsen, M., Stavridis, A.	RAPID/Collaborative Research: Post-Disaster, Reinforced Concrete Building Performance Data Collection following the April 25, 2015 Nepal Earthquake	\$81,326	\$28,643
NIST 2/15 – 1/20	Cox, D., Scott, M.H., Barbosa, A. R.	NIST Center of Excellence in Community Resilience	\$1,147,532	\$344,260
Cascadia Lifeline Prog. 10/15 – 09/16	Barbosa, A.R.	Cost-Effective Improvements in Seismic Performance of Legacy Infrastructure (Year 3)	\$48,961	\$48,961
PacTrans	Barbosa, A. R. and Stuedlein, A.	Torsional Safety of Highway Traffic Signal and Signage Support Structures	\$80,856	\$40,856
Oregon DOT 09/14-10/15	Stuedlein, A. and Barbosa, A. R.	Shafts in Torsion	\$60,000	\$20,000
Oregon BEST 10/14-08/16	Muszynski, L., Barbosa, A. R. , Sinha, A., and Gupta, R.	Commercialization of Cross Laminated Timber Panels Production in Oregon	\$150,000	\$37,500
Cascadia Lifeline Prog. 10/14 – 09/15	Barbosa, A.R.	Cost-Effective Improvements in Seismic Performance of Legacy Infrastructure (Year 2)	\$92,961	\$92,961

USDA NIFA 01/14-08/16	Muszynski, L., Barbosa, A. R. , Sinha, A., and Gupta, R.	Hybrid Cross-Laminated Timber Panels for Sustainable Building Solutions	\$289,631	\$72,485
NAS/NCHRP 11/13-11/15	Olsen, M. and Barbosa, A. R. , Veletzos, M. (Merrimack), Chen, Z. (UMKC).	NCHRP 14-29: Assessing, Coding, and Marking of Highway Structures in Emergency Situations (Phase II)	\$299,655	\$150,000
NAS/NCHRP 11/13-11/15	Olsen, M. and Barbosa, A. R. , Veletzos, M. (Merrimack), Chen, Z. (UMKC).	NCHRP 14-29: Assessing, Coding, and Marking of Highway Structures in Emergency Situations (Phase I)	\$100,000	\$50,000
CalTrans 11/13 – 08/15	Barbosa, A. R. and Ashford, S.	Assessment of Soil Arching Factor for Retaining Wall Pile Foundations (Phase 1)	\$185,257	\$92,629
Cascadia Lifeline Prog. 10/13-09/14	Barbosa, A.R.	Cost-Effective Improvements in Seismic Performance of Legacy Infrastructure (Year 1)	\$48,961	\$48,961
PACTRANS 9/13 – 12/14	Barbosa, A.R. and Trejo, D.	High-Performance Bridge Systems for Lifeline Corridors in the Pacific Northwest	\$100,000	\$50,000
Oregon DOT 9/13 – 12/15	Barbosa, A.R. and Trejo, D.	High Strength Steel Reinforcement for Bridges	\$135,000	\$67,500
PACTRANS 9/13 – 10/14	Mason, H.B. and Barbosa, A.R.	SSI Bridge 2: Evaluation of Soil-structure Interaction Effects on PNW Bridges	\$20,000	\$10,000
CPWR / NIH 07/13 – 06/14	Gambatese, J. and Barbosa, A. R.	Use and Re-use of Formwork: Safety Risks and Reliability Assessment	\$29,925	\$14,963
PACTRANS + ODOT 9/12 – 12/13	Trejo, D. and Barbosa, A.R.	Inspection, Assessment, Monitoring, and Renewal Strategies for Structures on Critical Lifeline Corridors	\$180,000	\$90,000
PACTRANS 9/12 – 8/13	Barbosa, A.R. and Mason, H. B.	SSI Bridge: Evaluation of Soil- structure Interaction Effects on PNW Bridges	\$44,727	\$22,363
Totals			\$4,199,513	\$1,779,364

C3.1. Donations

Perryman Company, November 21, 2014 donated \$115,000 for strengthening of civil infrastructure (50% for Chris Higgins and 50% my share)

C3.2. Proposals Currently under Review

<i>Agency</i>	<i>PI (and coPIs)</i>	<i>Title</i>	<i>Budget</i>	<i>Duration</i>
NIST	Cox, D., Barbosa, A. R.	Advancing Science-Based Building Codes for Wave Forces on Vertical Foundations and Walls of Near-Coast Structures	\$427,566 (my share: \$213,783)	2 yrs
NIST	Gupta, R., Barbosa, A.R. , Pei, S., Wang, P.	Unified Prescriptive Design Methodology for Multi-Hazard Resilient Wood Frame Residential Construction	\$1,000,000 (my share, \$225,000)	3 yrs
NSF / ENH	Kennedy, A., Cox, D., Barbosa, A. R. Lynett, P., Ghanem, R.	Collaborative Research: Wave, Surge, and Tsunami Overland Hazard, Loading and Structural Response for Developed Shorelines	\$1,035,838 (OSU share: 402,595; my share: \$201,298)	3 yrs
USDA Agricultural Research Service	Barbosa, A.R. , Sinha, A., Higgins, C.	Seismic Performance of Cross-Laminated Timber and Cross-Laminated Timber-Concrete Composite Floor Diaphragms	\$250,000 (my share: \$84,000)	3 yrs
USDA Agricultural Research Service	Higgins, C., Sinha, A., Barbosa, A.R.	Composite Concrete-CLT Floor Systems for Tall Building Design	\$250,000 (my share: \$84,000)	3 yrs
USDA Agricultural Research Service	Sinha, A., Barbosa, A.R.	Mitigating Fire Performance Concerns through Fire Endurance Model	\$250,000 (my share: \$125,000)	3 yrs
USDA Agricultural Research Service	Riggio, M., Barbosa, A.R. , Wymelenberg, K.	Living Lab @ Peavy Hall: Structural Health Performance of Mass Timber Buildings	\$250,000 (my share: \$84,000)	3 yrs

C4. Patents Filed and In Process

None

C5. Other Scholarship and Creative Activities**C5.1. Non-refereed Conference Proceedings**

1. **Barbosa, A.R.**, Castro, L.M.S.S., Resolução de Problemas de Elasticidade com Wavelets no Intervalo, *VII Encontro Nacional de Mecânica Aplicada e Computacional*, Évora, April, 2003
2. **Barbosa, A.R.**, Castro, L.M.S.S., Wavelets on the Interval - Application to elasticity problems, *Ondelettes et équations aux dérivées partielles*, Luminy, Marseille, March 2001

C5.2. Other Publications

1. Olsen, M.J., **Barbosa, A.R.**, Burns, P., Kashani, A., Wang, H., Veletzos, M., Chen, Z., Roe, G., Tabrizi, K. (2016). Guidelines for Development of Smart Apps for Assessing, Coding, and Marking Highway Structures in Emergency Situations. NCHRP Web Document 223, Transportation Research Board, <http://www.trb.org/Main/Blurbs/175321.aspx> (accessed 2017/02/18)
2. Varum, H., Arede, A., Vila-Pouca, N., Romao, X., Pauperio, E., Rodrigues, H., Furtado, A.F., Dias-Oliveira, J., **Barbosa, A.R.** (2016). Nepal – One year after the Earthquake. Challenges for reconstruction (in Portuguese). Boletim Bimestral of the Autoridade Nacional de Protecção Civil, 90, May/June 2016, ISSN 1646-9542
3. Sinha, A., Clauson, M., Muszynski, L., Mahadavifar, V., Larkin, B., **Barbosa, A.R.**, Gupta, R., (2015). CLT Prequalification Tests: Part 1: Test results for the first 3 layer CLT panels - Research Report Number WSE 15-DR1a (updated). Submitted to DR Johnson Co. (John Redfield)
4. **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.
5. Schotanus, M., Almufti, I., **Barbosa, A.**, Bray, J. Dawson, T., Marrow, J. Mieler, M., Scawthorn, C., Yashinsky, M. (2014) M 6.0 South Napa Earthquake of August 24, 2014. *EERI Special Earthquake Report*, October, 2014
6. Mason, H. B. and **Barbosa, A. R.** (2014) Napa Disaster Should Offer a Timely Lesson for Oregonians. *The Oregonian*, September 5, 2014. Opinion Editorial
7. **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)*, Seattle, Washington.
8. Trejo, D., **Barbosa, A. R.**, Link, T. (2014). Seismic Performance of Reinforced Concrete Bridge Columns Constructed with Grade 80 Reinforcement. *Final Project Report FHWA-OR-RD-15-02, SRS 500-610, Oregon Department of Transportation*, Salem, Oregon.
9. Gambatese, J., **Barbosa, A.R.**, Das, A. (2014) Use and Re-use of Formwork: Safety Risks and Reliability Assessment. *CPWR Small Study Report*, Silver Spring, MD
10. Panagiotou, M., Geonwoo, K., **Barbosa, A.R.**, and Restrepo, J.I.. (2007) Response Verification of a Reinforced Concrete Bearing Wall Building Located in an Area of High Seismic Hazard. *Report to Portland Cement Association*, September, 2007.
11. Panagiotou, M., Geonwoo, K., **Barbosa, A.R.**, and Restrepo, J.I. (2008) Response Verification of a Reinforced Concrete Bearing Wall Building Located in an Area of High Seismic Hazard. *SSRP Report 2008/05. UCSD - Department of Structural Engineering, La Jolla, California*, 2008.
12. Gu Q., **Barbosa, A.R.**, Conte, J.P.. (2008) *OpenSees Tutorial for UCSD -SE 207: Nonlinear Structural Analysis*
13. **Barbosa, A.R.**, *Introdução ao SAP2000*, (2000) *Texto de Apoio para as aulas de SAP2000*, Instituto Superior Técnico, Universidade Técnica de Lisboa

C5.3. Conference Abstracts

1. Mahdavifar, V., **Barbosa, A.R.**, Sinha, A., Muszynski, L., Gupta, R. (2016). Shear and Withdrawal Capacity of Fasteners on Hybrid Cross-Laminated Timber Panels. *70th International Convention- Forest Products Society*, June 26-29, 2016, Portland, Oregon
2. Larkin B., Muszynski, L., **Barbosa, A.R.**, Sinha, A., Gupta, R. (2016). Effective bonding parameters for hybrid cross-laminated timber (CLT) layups. *70th International Convention- Forest Products Society*, June 26-29, 2016, Portland, Oregon
3. Alam, M.S., **Barbosa, A.R.** (2016). Infill Strut Model Class Uncertainty of Seismic Response of Reinforced Concrete Masonry Infilled Frames. EMI 2016, Engineering Mechanics Institute Conference, May 22-25, 2016, Nashville, TN
4. Chang, W.Y., Nozari, A., Alam, M.S., Stavridis, A. Moaveni, B., **Barbosa, A.R.**, Wood, R.L. (2016). Structural Identification and Modeling of a Three-Story School Building Damaged During the 2015 Gorkha Earthquake. EMI 2016, Engineering Mechanics Institute Conference, May 22-25, 2016, Nashville, TN
5. Huffman, J.C., **Barbosa, A.R.**, Stuedlein, A.W. (2016). Simulation Framework for Reliability-based Serviceability Assessments of Multi-Story Steel-framed Structures Supported on Spatially-variable Soil. In: *2016 ASCE Geotechnical & Structural Engineering Congress*, Phoenix, Arizona, February 14-17, 2016
6. Bose S., Nozari, A., Mohammadi, M.E., Stavridis, A., Moaveni, B., Wood, R., Gillins, D., **Barbosa, A.R.** (2016). Structural assessment of a school building in Sankhu, Nepal damaged due to torsional response during the 2015 Gorkha Earthquake. Proc. of IMAC XXXIV - Engineering Nonlinearities in Structural Dynamics. Orlando, Florida.
7. Soti, R., **Barbosa, A.R.**, Stavridis, A. (2015). Analytical and Experimental Study of Seismic Performance of URM Walls and Infilled RC Frames Retrofitted with Near Surface Mounted Steel Bars. *2nd ATC-SEI Conference on Improving the Seismic Performance of Existing Buildings*
8. Larkin, B., Muszynski, L., Sinha, A., **Barbosa, A.R.**, Gupta, R. (2015). Effective adhesive systems and optimal bonding parameters for hybrid CLT. 58th SWST International Convention. Renewable Materials and the Bio-Economy, June 7-12, 2015, Jackson Lake Lodge, Grand Teton NP, Jackson, WY
9. Sinha A., **Barbosa, A.R.**, Kramer, A. (2015). Design and Performance of Steel Energy Dissipators to be Used in Cross-Laminated Timber Self-Centering Systems. 58th SWST International Convention. Renewable Materials and the Bio-Economy, June 7-12, 2015, Jackson Lake Lodge, Grand Teton NP, Jackson, WY
10. Alam, M., **Barbosa, A.R.** (2015). Modeling Uncertainties in Reinforced Concrete Masonry Infilled Frames. *Poster, ASCE Structures Congress, April 2015, Portland, Oregon*
11. Mason, H.B., **Barbosa, A.R.**, Carey, T., Scott, M. (2015). Tsunami bore impact on soil-bridge systems. *Oral Presentation, ASCE Structures Congress, April 2015, Portland, Oregon*
12. Asgarieh, E., Moaveni, B., and **Barbosa, A. R.** (2015). Probabilistic Nonlinear Identification of a Shear Wall using Time and Frequency Data. *Submitted to IMAC XXXIII, February 2015, Orlando, FL*
13. Belejo, A., **Barbosa, A.R.** (2014) Mainshock – Aftershock Interaction Diagram for a 3D Plan-Asymmetric Structure, In *Proceedings (Abstracts) 11th World Congress on Computational Mechanics (WCCM XI)*, July 2014

C5.4. Press

1. Flaccus, G., Le, P. (2016). New wood technology may offer hope for struggling timber, Associated Press, <https://goo.gl/snyMNF> (text and video, accessed: 2017/2/19)
This news piece and video was published in several other news outlets including:
 - a. New York Times
 - b. Boston Herald
 - c. Chicago Tribune
 - d. Washington Post
 - e. Miami Herald
 - f. San Francisco Chronicle
 - g. Seattle Post-Intelligencer
 - h. Several TV stations in Oregon and Washington, e.g. KTVZ <http://www.ktvz.com/>
2. Top of the tree: The case for wooden skyscrapers is not barking (2016). The Economist, September 10, 2016, <https://goo.gl/Hh7DIA> (accessed: 2017/2/19)
3. Post, N. (2016) SOM's Timber Tower Floor System Passes Muster. Engineering News Record (ENR), August 31, 2016, <https://goo.gl/kQ3EbK> (accessed: 2017/2/19)
4. Budds, D. (2016) FastCoDesign, Timber Sckyscrapers Aren't a Fantasy – Here's the Research That Proves It, August 31, 2016 <https://goo.gl/yv9Gvb> (accessed: 2017/2/19)
5. Lau, W. (2016) Testing a New Composite System for Tall Timber. August 31, 2016 Architect Magazine (accessed: 2017/2/19)
6. Andrews, G. (2016) Putting Innovation to the Test. Daily Journal of Commerce, April 13, 2016, <http://djcoregon.com/news/2016/04/13/putting-innovation-to-the-test/> (accessed: 2017/2/19)
7. Lynch, P. (2016) SOM's Timber Tower System Successfully Passes Strength Testing. Archdaily.com, August 18, 2016. <http://www.archdaily.com/793585/soms-timber-tower-system-successfully-passes-strength-testing> (accessed: 2017/2/19)
8. The Oregon State Engineer (2015) "Preparing for the Really Big One" and "Listing of Endowed Positions and Professors"
http://engineering.oregonstate.edu/sites/engineering.oregonstate.edu/files/resources/pages/oregon-state-engineer/theoregonstateengineer_2015.pdf (accessed: 2017/2/19)
9. Mason, H. B. and **Barbosa, A. R.** "Napa disaster should offer a timely lesson for Oregonians." *The Oregonian*, September 5, 2014. Also available online with the title "Napa earthquake argues for better education in Oregon: Guest opinion."
10. NIST GCR 14 917-30, "Use of High-Strength Reinforcement in Earthquake-Resistant Concrete Structures" Acknowledgement, http://www.nehrp.gov/pdf/GCR%2014-917-30_Use%20of%20High-Strength%20Reinforcement.pdf
11. PacTrans News, January 2014, http://depts.washington.edu/pactrans/wp-content/uploads/2014/01/PacTrans-News-5-January-2014_hi_res.pdf
12. 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/>
13. International Science Grid This Week. "Earthquake Risks", June 2012, <http://www.isgtw.org/feature/earthquake-risks>

14. Open Science Grid. “Testimonials”, June 2012,
<https://twiki.grid.iu.edu/bin/view/Management/TestimonialsList>
15. OSU Building Together, Industry Newsletter, Winter 2012 – Issue 4,
<http://cce.engr.oregonstate.edu/news/documents/CEM-2012-Winter.pdf>
16. International Urban Earthquake Engineering Center for Mitigating Seismic Mega Risk”
CUEE/PEER Young Researchers Workshop”, March 2009,
http://www.cuee.titech.ac.jp/English/News/ws_2009.html
17. PEER NEWS, 2009, “PEER Students attend CUEE Conference and Visit E-Defense Shaking
Table in Japan” http://peer.berkeley.edu/news/2009/peer_students_japan.html

C5.5. Guest Lectures and Other Presentations

1. **Barbosa, A.R.** (2015). Earthquake and Tsunami Loss Assessment, *University of Porto, Faculdade de Engenharia*, November 2015.
2. **Barbosa, A.R.** (2015). PEER-EERI-GEER Reconnaissance Briefing on the April 25, 2015 Nepal Earthquake, *UC Berkeley and live broadcast to the world* (presentation paper and video copy available online)
3. **Barbosa, A.R.** (2014). EERI-PEER Reconnaissance Briefing on the August 24, 2014 South Napa Earthquake, *UC Berkeley and live broadcast to the world* (presentation paper and video copy available online)
4. **Barbosa, A.R.** (2014). EERI-PEER Reconnaissance Briefing on the August 24, 2014 South Napa Earthquake, *UC Berkeley and live broadcast to the world* (presentation paper and video copy available online)
5. **Barbosa, A.R.** and Ashford, S. (2014). Lessons Learned from Recent Earthquakes: Implications for Oregon. *Presentation at the Lane County Utilities Coordinating Council*. November 2014
6. **Barbosa, A.R.**, Birely, A, Hacker, T., Lowes, L., Pordes, R. and Gazorglio, G. (2014). Integration of Simulation Data within the NEES Project Warehouse – NEES Research. *NEES Quake Summit*, Anchorage, Alaska, July 2014
7. **Barbosa, A.R.** (2013). NEES/OSG: Experiences in the use of “opportunistic” computing resources. *NEES Quake Summit*, Reno, Nevada, August 2013
8. **Barbosa, A.R.**, **Rosario, R.**, and Neves, L.A.C. (2013). Modeling of Frame Structures in Fire. *OpenSees Days 2013*, UC Berkeley, August 2013
9. **Barbosa, A.R.**, Conte, J.P., Restrepo, J.I., Baker, J.W. (2012). Vector-valued Probabilistic Seismic Hazard Analysis and Probabilistic Seismic Demand Analysis Application to the 13-story NEHRP Reinforced Concrete Frame-Wall Building Design Example. *PEER Annual Meeting*, Berkeley, CA, August 2012
10. **Barbosa, A.R.**, Conte, J.P., Restrepo, J.I., Baker, J.W. (2011). “High Fidelity” Nonlinear Building Simulation and Use of Open Science Grid, *PEER Annual Meeting*, Berkeley, CA., August 2011

C5.6. Refereed Publications in Preparation

Journal publications where a substantial amount of the analysis and writing are already performed (estimated percentages of completion in parentheses)

Archival Journals

1. Belejo, A., **Barbosa, A.R.** (2018). Influence of Soil-Structure Interaction and Ground Motion Duration Effects on Vulnerability of Vintage RC Bridges. To be Submitted to ASCE Journal of Bridge Engineering (Being prepared for submission in **Fall 2017**, analysis: 40%, writing: 10%).
2. Alam, M.S. and **Barbosa, A.R.** (2018). Effects of Infill Strut Model Class Uncertainty on Seismic Response of a Code Designed Reinforced Concrete Masonry Infilled Frame. To be Submitted to the Earthquake Engineering and Structural Dynamics (Being prepared for submission in **Fall 2017**, analysis: 50%, writing: 10%).
3. Belejo, A., **Barbosa, A.R.**, and Stuedlein, A. (2018). Impact of Soil-Structure Interaction on the Ground Motion Duration Effects Assessment of Steel Moment Resisting Frame Buildings. To be submitted to Engineering Structures (Being prepared for submission in **Fall 2017**, analysis: 75%, writing: 25%).
4. Soti, R., **Barbosa A.R.** (2018) Applied Element Simulation of URM walls retrofitted with Near Surface Mounted Steel Bars. To be Submitted to ASCE Journal of Structural Engineering (Being prepared for submission in **Fall 2017**, analysis: 75%, writing: 25%).
5. Rodrigues, L., **Barbosa, A.R.**, Branco, J., Neves, L. (2018). Progressive Collapse Modeling of Multi-Story Timber Buildings. To be Submitted to Engineering Structures (Being prepared for submission in **Fall 2017**, analysis: 25%, writing: 55%).
6. Alam, M.S., Barbosa, A.R., Park, H., Cox, D. (2018) Multi-Hazard Damage Assessment of Building Inventory for Earthquake and Tsunami Cascading Events: Application to Seaside, OR. To be Submitted to the Earthquake Spectra (Being prepared for submission in Summer 2017, analysis: 50%, writing: 10%).
7. **Barbosa, A.R.**, Mason, H. B., Carey, T., Scott, M.H. (2018). Tightly Coupled Modeling Framework for Tsunami following Earthquake Event Analysis using OpenSees. To be Submitted to the Journal of Earthquake and Tsunami (Being prepared for submission in **Summer 2017**, analysis: 75%, writing: 25%).
8. Huffman, J., Stuedlein, A., Belejo, A., and **Barbosa, A.R.** (2018) Simulation Framework for Reliability-based Serviceability Assessments of Multi-Story Steel-framed Structures Supported on Spatially-variable Soil. To Be Submitted to ASCE Journal of Structural Engineering (Being prepared for submission in **Summer 2017**, analysis: 75%, writing: 50%).
9. Mason, H. B. and **Barbosa, A. R.** (2017). Seismic fragility functions for soil-bridge systems considering long-duration earthquake loading. To be Submitted to the ASCE Journal of Bridge Engineering (Being prepared for submission in **Spring 2017**, analysis: 75%, writing: 25%).
10. Carey T.J., Mason, H.B., **Barbosa, A.R.**, and Scott, M.H. (2017) Multi-Hazard Effects on Soil-Foundation-Bridge Systems. To be Submitted to Journal of Bridge Engineering (Being prepared for submission in **Spring 2017**, analysis: 75%, writing: 75%).
11. Mahdavifar, V., **Barbosa, A.R.**, Sinha, A. (2017). Numerical Model for Out-Of-Plane Response Prediction of Cross-Laminated Timber Panels. To be submitted to Computers and Structures (Being prepared for submission in **Spring 2017**, analysis: 90%, writing: 50%).
12. **Barbosa, A.R.**, Conte, J.P., Baker, J.W., and Restrepo, J.I., (2017). Vector-Valued Probabilistic Seismic Hazard Analysis Using USGS Probabilistic Seismic Hazard Results. To be Submitted to

- Earthquake Spectra (being prepared for submission in **Spring 2017**, analysis: 100%, writing: 85%).
13. Belejo, A., **Barbosa, A.R.**, and Higgins, C. (2017). Study of Ground Motion Duration Effects in the Seismic Assessment of Non-retrofitted and Retrofitted Typical Oregon Bridges with Titanium Alloy Bars. To be submitted to ASCE Journal of Bridge Engineering (Being prepared for submission in **Spring 2017**, analysis: 90%, writing: 50%).
 14. Mahdavifar, V., **Barbosa, A.**, Sinha, A. (2017). Semi-Automated Calibration of Cyclic Response Parameters of Hysteretic Relations for CLT - Metal Connectors. To be submitted to Computers and Structures (Being prepared for submission in **Spring 2017**, analysis: 100%, writing: 75%).
 15. Scott, M.H. and **Barbosa, A.R.**, Alam, M.S. (2017). Force-Based Distributed Plasticity Finite-Length Plastic Hinge Elements. To be submitted to Computers and Structures (Being prepared for submission in **Spring 2017**, analysis: 95%, writing: 75%).
 16. Hussain, S.B., Belejo, A., **Barbosa, A.R.** (2017). Evaluation of Seismic Response Directional Combination Rules for Existing Plan Irregular Reinforced Concrete Buildings. To Be Submitted to Bulletin of Earthquake Engineering (Being prepared for submission in **Spring 2017** to Bulletin of Earthquake Engineering, analysis: 100%, writing: 75%).
 17. Buniya, M., **Barbosa, A.R.**, Sattar, S. (2017). Impact of Implementing Different Performance-Based Seismic Engineering Guidelines on the Design of Reinforced Concrete Moment Frames. To be submitted to ACI Special Publication. (Being prepared for submission in **April 2017**, analysis: 50%, writing: 20%).
 18. Mahdavifar, V., Sinha, A., **Barbosa, A.R.**, Muszynski, L., Gupta, R. (2017). Lateral and Withdrawal Capacity of Fasteners on Hybrid Cross-Laminated Timber Panels. To be submitted to Forest Products Journal (Being prepared for submission in **March 2017**, analysis: 100%, writing: 90%).
 19. Mahdavifar, V., Sinha, A., **Barbosa, A.R.**, Muszynski, L., Gupta, R. (2017). Hysteretic Behavior of Metal Connectors for Hybrid Cross Laminated Timber Application. To be submitted to ASCE Journal of Structural Engineering (Being prepared for submission in **March 2017**, analysis: 100%, writing: 90%).
 20. Rodrigues, L., Branco, J., Neves, L., **Barbosa, A.R.** (2017). Fragility Assessment of Timber Moment-Resisting Frame Structures Subjected to Earthquake Loading. To be Submitted to the Bulletin of Earthquake Engineering (Being prepared for submission in **March 2017**, analysis: 100%, writing: 90%).
 21. Park, H., Cox, D., Alam, M.S., **Barbosa, A.R.** (2017). Probabilistic seismic and tsunami hazard analysis (PSTHA) conditional on a mega-thrust rupture of the Cascadia Subduction Zone. To be Submitted to Front. Built Environ. (Being prepared for submission in **February 2017**, analysis: 100%, writing: 90%).
 22. Soti, R., **Barbosa, A.R.**, and Stavridis, A. (2017). Experimental and Numerical Study of URM-Infilled RC Frames Retrofitted with Embedded Reinforcing Steel. To be Submitted ASCE Journal of Structural Engineering (Being prepared for submission in **February 2017**, analysis: 100%, writing: 95%).
 23. **Barbosa, A. R.** and Long, Y. (2017). Effect of Subduction Zone Earthquakes on SDOF Bridge Models. (Being prepared for submission in 2017 to Earthquake Spectra, analysis: 95%, writing 50%).
 24. **Barbosa, A. R.**, Conte, J.P., Restrepo, J.I., and Baker, J.W., (2017). Probabilistic Seismic Demand Analysis of a 13-story RC Frame Wall Building based on Efficient Vector-Valued

Probabilistic Seismic Hazard Analysis. (Being prepared for submission in 2017 to Structural Safety analysis: 100%, writing: 75%).

25. **Barbosa, A. R.**, Conte, J.P., and Restrepo, J.I., (2017). Three-Dimensional Nonlinear Finite Element Modeling and Earthquake Response Analysis of the 13-Story NEHRP reinforced concrete Frame-Wall Building Example. (Being prepared for submission in 2017 to ASCE Journal of Structural Engineering, analysis: 100%, writing: 75%).

Conference Abstracts Submitted:

1. Alam, M.S., **Barbosa, A.R.**, Scott, M.H., Cox, D., van de Lindt, J.W. (2018). Development of Earthquake and Tsunami Multi-Hazard Fragility Surfaces for a Masonry Infilled Reinforced Concrete Building Structure. Eleventh U.S. National Conference on Earthquake Engineering, June 25-29, 2018, Los Angeles, CA.
2. Mugabo, I., **Barbosa, A.R.**, Riggio, M. (2018). Ambient Vibration Testing and Modal Analysis of Two Multi-Story Mass Timber Buildings. Eleventh U.S. National Conference on Earthquake Engineering. June 25-29, 2018. Los Angeles, CA.
3. Rodrigues, L., **Barbosa, A.R.**, Branco, J., Neves, L. (2018). Influence of Earthquake Ground-Motion Duration on the Fragility Assessment of a Moment-Resisting Timber Frame. Eleventh U.S. National Conference on Earthquake Engineering. June 25-29, 2018. Los Angeles, CA.
4. Mugabo, I., **Barbosa, A.R.**, Riggio, M. (2017). Ambient vibration testing and modal analysis of a multi-story mass timber building. ASCE Congress on Technical Advancement 2017. September 10-13, 2017. Duluth, Minnesota.
5. Rodrigues, L., Branco, J., Neves, L., **Barbosa, A.R.** (2017). Robustness of Multi-Story Timber Buildings in Seismic Regions. To be presented at Third INFRARISK- Summer Workshop (LNEC, Lisbon, Portugal, July 2017)
6. MahdaviFar, V., **Barbosa, A.R.**, Sinha, A., Muszynski, L., Gupta, R. (2017). Lateral and Withdrawal Capacity of One Screw Type on Hybrid Cross Laminated Timber Panel Applications. 71st International Convention, June 26-28, 2017, Starkville, Mississippi
7. Riggio M., Schmidt E.L., Laleicke P.F., **Barbosa A.R.**, Van Den Wymelenberg K. (2017). How monitoring CLT buildings can remove market barriers and support designers in North America: an introduction to preliminary environmental studies. CLEM+CIMAD 2017. May 2017.
8. Mohammed, M., Yu, H., Furtado, A., **Barbosa, A.R.**, Moaveni, B., Varum, H., Rodrigues, H., Vila Pouca, N., Wood, R. (2017). Post-earthquake field measurement-based system identification and finite element modeling of an 18-story masonry-infilled RC building. 7th International Conference EVACES San Diego, California, United States - July 12-14, 2017.
9. Soti, R., **Barbosa A. R.** (2017). Three-Dimensional Numerical Evaluation of Masonry Walls Retrofitted with Near Surface Mounted Reinforcing Steel Bars, ASCE EMI Conference.
10. Capozzo, M., Rizzi, A., Cimellaro, G.P., **Barbosa, A.R.**, Cox, D. (2017). Earthquake and Tsunami Resiliency Assessment for A Coastal Community in The Pacific Northwest, USA. ASCE-SEI Structures Congress, April 6-8, 2017, Denver, CO.
11. Alam, M.S., **Barbosa, A.R.**, Park, H., Cox, D. (2017). Probabilistic Seismic and Tsunami Hazard Analysis (PSTHA) Conditional on A Mega-Thrust Rupture of the Cascadia Subduction Zone. 2017 EERI annual meeting, March 7-10, 2017. Portland, OR.
12. Soti R., **Barbosa, A.R.**, Jaho G., Mortola, E. A., Lagomarsino S., Cattari S. (2017). New Generation Fragility Functions for Unreinforced Masonry Buildings: Application to the City of Portland Oregon, EERI annual Meeting in Portland, OR, on March 7-10, 2017.

D. SERVICE**D1. University Service**

- Structures Faculty Search Committee, School of Civil & Construction Engineering, 2016-2017 (Chair I. Burkan)
- Search Committee for Advanced Wood Products Lab Director, School of Civil & Construction Engineering, 2015-2016 (Chair Laurence Schimleck – Wood Science)
- School Head Search Committee Member, School of Civil & Construction Engineering, 2014-2015
- Scholarship Committee, School of Civil & Construction Engineering, 2014-2015 (Chair J. Ideker)
- Interim School Head Search Committee Member, School of Civil & Construction Engineering, 2014
- Faculty Search Committee Member, Construction and Engineering Management, School of Civil & Construction Engineering, 2013-2014 (Chair D. Trejo)
- Strategic Planning Committee, School of Civil & Construction Engineering, 2013 (Chair D. Sillars)
- Faculty Search Committee Member, Structural Engineering, School of Civil & Construction Engineering, 2012-2013, (Chair J. Gambatese)
- Graduate Committee Representative on several Masters defenses

D2. Service to the Profession

D2.1. Journal Editorships

None

D2.2. Conference and Workshop Organization

- Organizing Committee, First European Conference on Opensees, XIIth International Conference on Structural Repair and Rehabilitation, June 19-20, 2017, Portugal
- Organizing Committee – OpenSees Days 2014 – Portugal, <http://lese.fe.up.pt/OSDPt2014/>
- Organizing Committee – OpenSees on the Road at Oregon State University Workshop, November 21-22, 2013, Corvallis, Oregon; co-organized with Prof. Michael Scott.

D2.3. Conference Program Committees

- Scientific Committee, CINPAR 2016, XIIth International Conference on Structural Repair and Rehabilitation, 26-29 October 2016, Porto, Portugal.
- Scientific Committee, International Conference on Earthquake Engineering and Post Disaster Reconstruction Planning, 24-26 April 2016, Bhaktapur, Nepal
- Panel member on the Cascadia Region Earthquake Readiness Report at the 10th Annual Energy and Construction Best Practices Summit. *10th Annual Energy & Construction Best Practices Summit - Clean Tech. - Washington's WISE Future, Tacoma, WA, May 29, 2015.*
- Session Chair, Performance-based Engineering (Organizer, Michele Barbato, LSU), 11th International Conference on Structural Safety & Reliability (ICOSSAR 2013), June 2013

D2.4. Reviewing

- National Science Foundation, Hazard Mitigation and Structural Engineering, 2013/2014 submission cycle (Program manager: Kishor Mehta)
- Other Funding Agencies:
 - Romanian-Executive Agency for Higher Education, Research, Development and Innovation Funding (www.uefiscdi.gov.ro), 4 proposals, 2014
 - Italian-Cineca (Min. Dell' Istruzione, Dell' Universita e Della Ricerca), 6 proposals, <http://www.cineca.it/en>, 2012
- Archival Journal Reviewer
 - *ASCE Journal of Bridge Engineering* (2 papers)
 - *ASCE Journal of Structural Engineering* (4 papers)
 - *Earthquake Engineering and Structural Dynamics* (2 papers)
 - *Engineering Structures* (2 papers)
 - *Journal of Earthquake Engineering* (2 papers)
 - *Elsevier Fire Structural Journal* (1 paper)
 - *ASCE Journal of Engineering Management* (3 papers)
 - *Bulleting of Earthquake Engineering* (1 paper)
 - *Journal of Maderas, Chile* (1 paper)
- Refereed Conference Proceedings
 - 2017, 16th World Conference in Earthquake Engineering, Chile, several abstracts
 - 2016, CINPAR XII International Conference on Structural Repair and Rehabilitation
 - 2014, 10th National Conference in Earthquake Engineering, Alaska, 9 papers
 - 2013, 11th Int. Conf. on Structural Safety & Reliability – ICOSSAR, 3 papers

D2.5. Other

- Member of the ASCE SEI Methods of Monitoring Structural Performance Committee
- Member of the ASCE SEI Performance-Based Design For Structures Committee
- Member of the ASCE SEI Advances In Simulation Committee
- Member of the ASCE SEI Seismic Effects For Structures Committee
- Member of the ASCE SEI Wood Research Committee
- American Concrete Institute (ACI), Member, 2014 – present
- Consortium of Universities for Research of Earthquake Engineering (CUREE), Member, 2012 – present
- American Society of Civil Engineers (ASCE), Member, 2008 – present
- Earthquake Engineering Research Institute (EERI), Member, 2008 – present
- Professional/Licensed Engineer in Portugal (1999-present).

D3. Service to the Public

D3.1. Professionally Related

- Appraiser for the Oregon CLT Design Contest (2016) <http://oregonbest.org/what-we-offer/expertise/competitions/clt/>
- Mass-timber Conference (2016) Construction Lessons Learned, Track leader and panel moderator <https://www.masstimberconference.com/2016-home/2016-agenda/>
- Invited by Kent Yu to join the ASCE Infrastructure Resilience Division Disaster Response And Recovery Committee (2015)
- Member of the NEES (2013-2014) Requirements Analysis and Assessment Subcommittee (RAAS)
- NIST GCR 14 917-30 (2013), “Use of High-Strength Reinforcement in Earthquake-Resistant Concrete Structures.” Acknowledgement
- Bridge to the future: End-to-end Simulations and Integration of Simulation Data within the NEES Project Warehouse (2013)
- Oregon Wood Innovation Center (2013), “Bending stiffness and strength of massive (8'x40') engineered timber composites.” (URL: <http://owic.oregonstate.edu/evaluation-massive-timber-composites>, accessed 1/15/2015)
- Open Source Code Development (OpenSees):
 - Led updates, implementation, and committed three material models in OpenSees for cyclic/earthquake analysis of strength and stiffness degrading force-deformation models:
 - Bilinear model with degradation
 - Peak oriented with degradation
 - Pinching material with degradation
 - Updated examples for dynamic analysis of 2-Story moment resisting frame: http://opensees.berkeley.edu/wiki/index.php/Dynamic_Analysis_of_2-Story_Moment_Frame
- Oregon Resilience Plan (2012) – Participated in the Critical Buildings Task Group; served as Resource Manager, and co-authored the section on Critical Buildings. Available online at: http://www.oregon.gov/OMD/OEM/osspace/docs/Oregon_Resilience_Plan_Final.pdf
- Led the Production-demo Phase of Integration of the Network for Earthquake Engineering Simulation (NEES) running OpenSees on the Open Science Grid, <https://twiki.opensciencegrid.org/bin/view/Engagement/EngageOpenSeesProductionDemo>

D3.2. Other Public Service

- Volunteer and Appraiser for Destination Imagination (2016 and 2017)
- Currently working on the development of an Incentive Program for Improving Resilience of Downtown Corvallis (w/ Cathy Kerr, Historic Resources Commission, City of Corvallis).

D3.3. On the Media

- <http://www.enr.com/articles/40146-soms-timber-tower-floor-system-passes-muster>
- https://twitter.com/benjohnson_som/status/766345362537783296

- <https://www.fastcodesign.com/3062920/timber-skyscrapers-arent-sci-fi-heres-the-research-that-proves-it>
- <http://archpaper.tumblr.com/post/149700102878/working-with-oregon-state-university-osu>
- <http://archpaper.com/2016/08/som-timber-tower-technology/#gallery-0-slide-0>
- http://www.architectmagazine.com/technology/q-a-soms-benton-johnson-on-testing-a-new-composite-system-for-tall-timber_o

E. AWARDS

E1. National and International Awards

- Invited Young Researcher, Tokyo Tech, Japan, CUEE/PEER Young Research Workshop, Mar. 2009
- NEES Graduate Summer Internship (NEES GSI) Program, August, 2008 at the San Diego Supercomputer Center (SDSC) at the University of California, San Diego (UCSD)
- Ph.D. scholarship by the Fundação para a Ciência e a Tecnologia for performing Ph.D. studies at UCSD - BD/17266/2004, Portugal
- M.S. scholarship by the Fundação para a Ciência e a Tecnologia - Portugal

E2. State and Regional Awards

2014 Recognition by State of Oregon Senator's office for contributions to the development of the Oregon Resilience Plan, developed by 2013

E3. University or Community Awards

2014-2017 Kearney Faculty Endowed Scholar for Outstanding Achievements by an Assistant Professor promoting Civil Engineering.