

Curriculum Vitae (Updated May 2019)

Keri L. Ryan, Ph.D.

Associate Professor

Dept. of Civil and Environmental Engineering

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Professional Preparation

University of California, Berkeley, CA

Ph.D. in Structural Engineering, Mechanics and Materials

2004

Dissertation: "Estimating the Seismic Response of Base-Isolated Buildings Including Torsion, Rocking, and Axial-Load Effects"

University of California, Berkeley, CA

M.S. in Structural Engineering, Mechanics and Materials

1999

California Institute of Technology, Pasadena, CA

B.S. in Engineering and Applied Science

1998

Graduated with Honors

Appointments

University of Nevada, Reno, NV

Associate Professor

2013-Present

Assistant Professor

2010-2013

Department of Civil and Environmental Engineering

Utah State University, Logan, UT

Assistant Professor - Structures Division

2004 -2010

Department of Civil and Environmental Engineering

University of California, Berkeley, CA

Graduate Student Instructor – E77: Introduction to Computer Programming

2003

Graduate Student Researcher

1999-2004

California Institute of Technology, Pasadena, CA

Research Fellowships

1996-1998

Teaching Assistant

1996-1997

Teaching Experience at University of Nevada, Reno

CEE 120: Civil Engineering in a Sustainable Society

Offered Spring 2014-2016

Typical Enrollment: 90-150

CEE 372: Mechanics of Solids

Offered Spring 2011, Fall 2012-2015, Spring 2015

Typical Enrollment: 100-150

CEE 381: Structural Analysis

Offered Fall 2012, 2017, 2018

Typical Enrollment: 30-100

CEE 482/682: Design of Timber Structures

Offered Spring 2019

Enrollment: 32

CEE 486/686: Computational Structural Analysis

Offered Fall 2017, 2018

Enrollment: 6-12

CEE 704: Finite Element Analysis

Offered Spring 2012, 2014

Typical Enrollment: 6-12

CEE 721: Nonlinear Structural Analysis

Offered Spring 2013, Fall 2014, Spring 2018

Typical Enrollment: 6-12

CEE 724: Elasticity

Offered Fall 2010

Enrollment: 11

Teaching Experience at Utah State University

CEE 6130: Structural Dynamics and Seismic Design

Offered Every Fall 2004 – 2009

Typical Enrollment: 10-15

CEE 6930/6010: Finite Element Analysis of Structures

Offered Spring 2006, 2008-2010

Typical Enrollment: 10-15

CEE 3010: Mechanics of Materials

Offered Fall 2006 – Fall 2009

Typical Enrollment: 60-70

CEE 7110: Constitutive Modeling and Structural Response
Offered Spring 2007, Fall 2010
Typical Enrollment: 3-5

CEE 6930: Nonlinear Structural Analysis
Offered Spring 2005
Typical Enrollment: 3-5

CEE 6930: Seismic Resistant Design
Offered Spring 2010
Enrollment: 10

Graduated Advisees (Major Advisor Role for Research)

Walaa Eltahawy	Ph.D.	2018
Stephen Blount	M.S. with Thesis	2018
Sevki Cesmeci	Ph.D. (Co-advisor)	2017
Leanne White	M.S. with Thesis	2017
Jean Guzman Pujols	Ph.D.	2016
Jared Jones	M.S. with Thesis	2016
Camila Coria	Ph.D.	2015
Hamed Zargar	Ph.D.	2015
Jean Guzman Pujols	M.S. with Thesis	2013
Alireza Mohebbi	M.S. with Thesis	2013
Nhan Dao	Ph.D.	2012
Yumei Jiang	M.S. with Thesis	2012
Brian Richins	M.S. with Thesis	2011
Emad Abraik	M.S. with Project	2010
Yolanda Baez	M.S. with Project	2010
Santosh Shirahatti	M.S. with Project (Computer Science)	2010
Prayag Sayani	Ph.D.	2009
Camila Coria	B.S. (Undergraduate Research)	2009
Wenyong Hu	M.S. with Thesis	2008
Desiray Larsen	M.S. with Project	2008
Abdollah Shafieezadeh	M.S. with Thesis	2008
Kaitlin Neville	B.S. (Undergraduate Research Fellow)	2008
Stephen Pugh	M.S. with Project	2008
Curtis Earl	M.S. with Thesis	2007
Jose Polanco	M.S. with Thesis	2007
Nash Wilson	M.S. with Project	2007
Kelby York	M.S. with Project	2006

Current Advisees (Major Advisor Role for Research)

Rushil Mojidra	M.S.	Expected 2019
Hamed Hasani	Ph.D.	Expected 2020

Refereed Journal Publications

- Eltahawy, Walaa, **Ryan, Keri L.**, Cesmecci, Sevki, Gordaninejad, Faramarz, “Displacement/velocity-based control of a liquid spring – MR damper for vertical isolation”, *Structural Control and Health Monitoring*, <https://doi.org/10.1002/stc.2363>, **2019**.
- Dao, Nhan D., **Ryan, Keri L.**, Nguyen-Van, Hieu, “Evaluating simplified models in predicting global seismic responses of a shake-table-test building isolated by triple friction pendulum bearings”, *Earthquake Engineering and Structural Dynamics*, <https://doi.org/10.1002/eqe.3152>, **2018**.
- Eltahawy, Walaa, **Ryan, Keri L.**, Cesmecci, Sevki, Gordaninejad, Faramarz, “Parameters affecting dynamics of three-dimensional seismic isolation”, *Journal of Earthquake Engineering*, <https://doi.org/10.1080/13632469.2018.1537902>, **2018**.
- **Ryan, Keri L.**, Button, Martin R., Mayes, Ronald L. “ASCE 7-16 lateral force distribution equations for static design of seismically isolated buildings”, *Journal of Structural Engineering*, 145(2):04018258, doi: 10.1061/(ASCE)ST.1943-541X.0002249, **2018**.
- Cesmecci, Sevki, Gordaninejad, Faramarz, **Ryan, Keri L.**, Eltahawy, Walaa, “A liquid spring-magnetorehological damper system under combined axial and shear loading for three-dimensional seismic isolation of structures”, *Journal of Intelligent Material Systems and Structures*, 29(18):3517-3532, doi: 10.1177/1045389X18783090, **2018**.
- **Ryan, Keri L.**, Okazaki, Taichiro, Coria, Camila B., Sato, Eiji, Sasaki, Tomohiro, “Response of hybrid isolation system during a shake table experiment of a full scale isolated building”, *Earthquake Engineering and Structural Dynamics*, 47:2214-2232. <https://doi.org/10.1002/eqe.3065>, **2018**.
- Guzman Pujols, Jean C., **Ryan, Keri L.** “Slab vibration and horizontal-vertical coupling in the seismic response of low-rise irregular base-isolated and conventional buildings”, *Journal of Earthquake Engineering*, doi:10.1080/13632469.2017.1387197, **2017**.
- Jones, Jared T., **Ryan, Keri L.**, Saiidi, M. Saiid. “Full-depth and partial-depth bridge deck panels”, *Concrete International*, 39(8):37-43, **2017**.
- Guzman Pujols, Jean C., **Ryan, Keri L.** “Computational simulation of slab vibration and horizontal-vertical coupling in a full-scale testbed subjected to 3D shaking at E-Defense”, *Earthquake Engineering and Structural Dynamics*, 47(2):438-459, doi: 10.1002/eqe.2973, **2017**.
- Zargar, Hamed, **Ryan, Keri L.**, Rawlinson, Taylor, Marshall, Justin D. “Evaluation of a passive gap damper to control displacements in a shaking test of a seismically-isolated 3-story frame”, *Earthquake Engineering and Structural Dynamics*, 46(1):51-71, doi: 10.1002/eqe.2771, **2016**.
- Mohebbi, Alireza, **Ryan, Keri L.**, Sanders, David H. “Seismic protection of the piers of integral bridges using sliding bearings”, *Journal of Earthquake Engineering*, 21(8):1365-1384, <https://doi.org/10.1080/13632469.2016.1211567>, **2016**.

- Cutfield, Matt R., **Ryan, Keri L.**, Ma, Quincy. “Comparative life cycle analysis of conventional and base-isolated buildings”, *Earthquake Spectra*, EERI, 32(1):323-343. <http://dx.doi.org/10.1193/032414EQS040M>, 2016.
- Guzman Pujols, Jean C., **Ryan, Keri L.** “Development of generalized fragility functions for seismic induced content disruption”, *Earthquake Spectra*, EERI, 32(3):1303-1324. <http://dx.doi.org/10.1193/081814EQS130M>, 2015.
- **Ryan, Keri L.**, Soroushian, Siavash, Maragakis, E. Manos, Sato, Eiji, Sasaki, Tomohiro, Okazaki, Taichiro. “Seismic simulation of an integrated ceiling-partition wall-piping system at E-Defense I: Three-dimensional structural response and base isolation”, *Journal of Structural Engineering*, ASCE, 142(2):04015130, [http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0001384](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0001384), 2015.
- Soroushian, Siavash, Maragakis, E. Manos, **Ryan, Keri L.**, Sato, Eiji, Sasaki, Tomohiro, Okazaki, Taichiro, Mosqueda, Gilberto. “Seismic simulation of an integrated ceiling-partition wall-piping system at E-Defense. II: Evaluation of nonstructural damage and fragilities”, *Journal of Structural Engineering*, ASCE, 142(2):04015131, [http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0001385](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0001385), 2015.
- **Ryan, Keri L.**, Dao, Nhan D. “Influence of vertical ground shaking on horizontal response of seismically-isolated buildings with friction bearings”, *Journal of Structural Engineering*, ASCE, 142(1): 04015089, [http://dx.doi.org/10.1061/\(ASCE\)ST.1943-541X.0001352](http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0001352), 2015.
- Rawlinson, Taylor A., Marshall, Justin D., **Ryan, Keri L.**, and Hamed Zargar. “Development and experimental evaluation of a passive gap damper device to prevent pounding in base-isolated structures”, *Earthquake Engineering and Structural Dynamics*, 44(11):1661-1675, 2015.
- Giammona, Anthony P., **Ryan, Keri L.**, Dao, Nhan D., “Evaluation of assumptions used in engineering practice to model buildings isolated with triple pendulum isolators in SAP 2000”, *Earthquake Spectra*, EERI, 31(2):637-660, 2015.
- Guzman, Jean and **Ryan, Keri L.**, “Data from a NEES/E-Defense collaborative test program on innovative isolation systems and nonstructural components,” *Earthquake Spectra*, EERI, 31(2):1195-1209, 2015.
- Dao, Nhan D. and **Ryan, Keri L.** “Computational simulation of a full-scale fixed-base and isolated-base steel moment frame building tested at E-Defense”, *J. Struct. Eng.*, 140, Special Issue: Computational Simulation in Structural Engineering, A4014005, [https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0000922](https://doi.org/10.1061/(ASCE)ST.1943-541X.0000922), 2014.
- Dao, Nhan D., **Ryan, Keri L.**, Sato, Eiji and Sasaki, Tomohiro. “Predicting the displacement of triple pendulumTM bearings in a full-scale shaking experiment using a three-dimensional element”, *Earthquake Engineering and Structural Dynamics*, 42(11):1677-1695, <https://doi.org/10.1002/eqe.2293>, 2013.
- Zargar, Hamed, **Ryan, Keri L.**, and Marshall, Justin D., “Feasibility study of a gap damper concept to control seismic isolator displacements in extreme earthquakes”, *Structural Control and Health Monitoring*, 20(8):1159-1175, 2013.

- Scott, Michael H. and **Ryan, Keri L.**, “Moment-rotation behavior of force-based plastic hinge elements”, *Earthquake Spectra*, 29(2):597-607, **2013**.
- Sanchez, Jose, Masroor, Armin, Mosqueda, Gilberto and **Ryan, Keri L.**, “Static and dynamic stability of elastomeric bearings for seismic protection of structures”, *Journal of Structural Engineering*, 139(7):1149-1159, **2013**.
- Warn, Gordon P. and **Ryan, Keri L.** “A review of seismic isolation for buildings: historical development and research needs”, *Buildings* (Open Access), Invited manuscript for journal special issue, 2(3):300-325, <https://doi.org/10.3390/buildings2030300>, **2012**.
- Sayani, Prayag J., Erduran, Emrah, and **Ryan, Keri L.**, “Comparative response assessment of minimally compliant low-rise base-isolated and conventional steel moment resisting frame buildings”, *Journal of Structural Engineering* (ASCE), 137(10):1118-1131, **2011**.
- Erduran, Emrah, Dao, Nhan D., and **Ryan, Keri L.**, “Comparative response assessment of minimally compliant low-rise conventional and base-isolated steel braced frames”, *Earthquake Engineering and Structural Dynamics*, 40(10):1123-1141, **2011**.
- Erduran, Emrah and **Ryan, Keri L.**, “Effects of torsion on the behavior of steel braced frames”, *Earthquake Engineering and Structural Dynamics*, 40(5):491-507, **2011**.
- Shafieezadeh, A. and **Ryan, Keri L.**, “Demonstration of robust stability and performance of filter-enhanced H2/LQG controllers for a nonlinear structure”, *Structural Control and Health Monitoring*, 18(6):710-720, **2011**.
- **Ryan, Keri L.**, Arendt, Lucy, and Larsen, Desiray, “Evaluation of design review process and requirements for seismic-isolated buildings”, *Earthquake Spectra*, 26(4):1101-1116, **2010**.
- **Ryan, Keri L.** and Earl, Curtis L., “Analysis and design of inter-story isolation systems with nonlinear devices”, *Journal of Earthquake Engineering*, 14(7):1044-1062, **2010**.
- Sayani, Prayag J. and **Ryan, Keri L.**, “Evaluation of approaches to characterize seismic isolation systems for design”, *Journal of Earthquake Engineering*, 13(6):835-851, **2009**.
- Sayani, Prayag J. and **Ryan, Keri L.**, “Comparative evaluation of base-isolated and fixed-base buildings using a comprehensive response index”, *Journal of Structural Engineering* (ASCE), 135(6):698-707, **2009**.
- **Ryan, Keri L.** and Polanco, Jose, “Problems with Rayleigh damping in base-isolated buildings”, Technical Note, *Journal of Structural Engineering* (ASCE), 134(11):1780-1784, **2008**.
- York, Kelby and **Ryan, Keri L.**, “Distribution of lateral forces in base-isolated buildings considering isolation system nonlinearity”, *Journal of Earthquake Engineering*, 12(7):1185-1204, **2008**.
- Shafieezadeh, Abdollah, **Ryan, Keri**, and Chen, YangQuan. “Fractional order filter enhanced LQR for seismic protection of civil structures”, Special issue on “Discontinuous and Fractional Dynamical Systems” *Journal of Computational and Nonlinear Dynamics*, ASME, 3(2):21404, **2008**.

- **Ryan, Keri L.** and Chopra, Anil K., “Estimating bearing response in symmetric and asymmetric-plan isolated buildings with rocking and torsion”, *Earthquake Engineering and Structural Dynamics*, 35(8):1009-1036, **2006**.
- **Ryan, Keri L.** and Chopra, Anil K., “Estimating seismic demands for isolation bearings with building overturning effects”, *Journal of Structural Engineering*, ASCE, 132(7):1118-1128, **2006**.
- **Ryan, Keri L.**, Kelly, James M. and Chopra, Anil K., “Nonlinear model for lead-rubber bearings including axial-load effects”, *Journal of Engineering Mechanics*, ASCE, 131(12):1270-1278, **2005**.
- **Ryan, Keri L.** and Chopra, Anil K., “Estimating the seismic displacement of friction pendulum isolators based on nonlinear response history analysis,” *Earthquake Engineering and Structural Dynamics*, 33(3): 359-373, **2004**.
- **Ryan, Keri L.** and Chopra, Anil K., “Estimation of seismic demands on isolators in asymmetric buildings using non-linear analysis,” *Earthquake Engineering and Structural Dynamics*, 33(3): 395-418, **2004**.
- **Ryan, Keri L.** and Chopra, Anil K., “Estimation of seismic demands on isolators based on nonlinear analysis“, *Journal of Structural Engineering*, ASCE, 130(3):392-402, **2004**.
- **Ryan, Keri L.** and Chopra, Anil K. “Approximate analysis methods for asymmetric-plan base-isolated buildings,” *Earthquake Engineering and Structural Dynamics*, 31(1): 33-54, **2002**.
- Hall, John F. and **Ryan, Keri L.**, "Isolated buildings and the 1997 UBC near-source factors," *Earthquake Spectra*, EERI, 16(2): 393-411, **2000**.

Journal Publications in Review

- Blount, Stephen W., **Ryan, Keri L.**, Henry, Richard S., Lu, Yiqiu, Elwood, Kenneth J. “Evaluation of lower damage concepts for enhanced repairability of reinforced concrete walls”, Submitted to *Engineering Structures*, **2019**.
- Eltahawy, Walaa, **Ryan, Keri L.** “Performance of flexible frame building with horizontal and 3D seismic isolation when subjected to 3D ground shaking”, Submitted to *Earthquake Spectra*, **2018**.
- Lawson, Leanne, **Ryan, Keri L.**, Buckle, Ian G. “Bridge temperature profiles revisited: thermal analyses based on recent meteorological data from Nevada”, Submitted to *Journal of Bridge Engineering*, **2018**.

Conference Proceedings

- Mehrsoroush, A., Saiidi, M.S., **Ryan, K. L.** “Seismic performance of one-piece pipe pins and precast rebar hinges in bridge piers” (Extended Abstract), *Eleventh U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Los Angeles, CA. June 2018.
- Eltahawy, W., A., **Ryan, K. L.**, Cesmeci, S., Gordaninejad, F. “Control strategy for liquid spring – MR damper for vertical isolation”, *Eleventh U.S. National Conference on*

Earthquake Engineering, Earthquake Engineering Research Institute, Los Angeles, CA. June 2018.

- **Ryan, K. L.**, Button, M.R., Mayes, R.L. “ASCE 7-16 lateral forces for static design of base-isolated buildings”, *Eleventh U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Los Angeles, CA. June 2018.
- Hasani, H., **Ryan, K.**, Amer, A., Ricles, J., Sause, R. “Pre-test seismic evaluation of drywall partition walls integrated with a timber rocking wall”, *Eleventh U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Los Angeles, CA. June 2018.
- Moustafa, M. A., Joe, Christopher D., **Ryan, Keri L.** “Seismic design and performance of ultra-high performance concrete bridge bents”, *Proc., AFGC-ACI-fib-RILEM Int. Symposium on Ultra-High Performance Fibre-Reinforced Concrete (UHPFRC 2017)*, October 2017.
- **Ryan, K. L.** Coria, C. B. “Influence of base frame/slab stiffness on seismic loading of hybrid isolation systems”, *Proc., 2017 New Zealand Society for Earthquake Engineering (NZSEE) Conference and Anti-Seismic Systems International Society 15th World Conference on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures*, April 2017. Peer Reviewed.
- Pei, S., van de Lindt, J. W., Ricles, J. Sause, R., Berman, J., **Ryan, K.**, Dolan, J.D., Buchanan, A., Robinson, T., McDonnell, E., Blomgren, H., Popovski, M., Rammer, D. “Development and full-scale validation of resilience-based seismic design of tall wood buildings: the NHERI Tall Wood Project”, *Proc., 2017 New Zealand Society for Earthquake Engineering (NZSEE) Conference and Anti-Seismic Systems International Society 15th World Conference on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures*, April 2017. Peer Reviewed.
- Eltahawy, W. **Ryan, K.**, Cesmecci, C., Gordaninejad, F. “Fundamental dynamics of 3-dimensional seismic isolation”, *Proc., 16th World Conference on Earthquake Engineering*, Paper No. 1508, Chilean Association of Seismology and Earthquake Engineering, Santiago, Chile, January 2017. Peer Reviewed.
- **Ryan, K.**, Zargar, H., Marshall, J., Rawlinson, T. “Experimental validation of a gap damper to control the displacement demands in a seismically isolated building”, *Proc., 16th World Conference on Earthquake Engineering*, Paper No. 1508, Chilean Association of Seismology and Earthquake Engineering, Santiago, Chile, January 2017. Peer Reviewed.
- **Ryan, K. L.**, Kirn, A. “Active Learning and Engagement in Solid Mechanics”, *Proc., 2015 ASEE Annual Conference and Exposition*, American Society of Engineering Education, Seattle, WA, June 2015. Peer Reviewed.
- Mohebbi, A., **Ryan, K. L.**, Sanders, D. H., “Controlling the Seismic Damage in Bridge Columns using Structural Fuses”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.
- Rawlinson, T. A., Marshall, J. D., **Ryan, K. L.**, Zargar, H. “Design and Testing of a Gap Damper Device to Mitigate Rare Earthquake Pounding Response in Base-Isolated Buildings”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake

Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.

- Guzman, J. C., **Ryan, K. L.** “Experimental Study of Target Demands to Minimize Seismic Induced Content Disruption”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.
- Cutfield, M. R., **Ryan, K. L.**, Ma, Q. T. “NEES TIPS Project: A Case Study Cost-Benefit Analysis on the Use of Base Isolation in a Low-Rise Office Building”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.
- Okazaki, T., Sato, E., **Ryan, K. L.**, Sasaki, T., Mahin, S. “Performance of Triple Pendulum Bearings in a Full-Scale Shake Table Test Program”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.
- Coria, C. B., **Ryan, K. L.** “Response of Hybrid Isolation System during a Shake Table Experiment of a Full Scale Seismically Isolated Building”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.
- Zargar, H., **Ryan, K. L.**, Marshall, J. D., Rawlinson, T. “The Effects of Residual Displacement on Gap Damper Performance”, *Proc., 10th U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Anchorage, AK, July 2014. Peer Reviewed.
- Masroor, A., Sanchez, J., Mosqueda, G., **Ryan, K. L.** “Dynamic Stability of Elastomeric Bearings at Large Displacements”, *Proc., 15th World Conference on Earthquake Engineering*, Portuguese Society for Earthquake Engineering, Lisbon, Portugal, September 2012, Peer Reviewed.
- Zargar, H., **Ryan, K. L.**, Rawlinson, T., Marshall, J. D. “Exploring the Gap Damper Concept to Explore Seismic Isolation Displacement Demands”, *Proc., 15th World Conference on Earthquake Engineering*, Portuguese Society for Earthquake Engineering, Lisbon, Portugal, September 2012, Peer Reviewed.
- Sasaki, T., Sato, E., **Ryan, K. L.**, Okazaki, T., Mahin, S. A., Kajiwara, K. “NEES/E-Defense Base-Isolation Tests: Effectiveness of Friction Pendulum and Lead-Rubber Bearing Systems”, *Proc., 15th World Conference on Earthquake Engineering*, Portuguese Society for Earthquake Engineering, Lisbon, Portugal, September 2012, Peer Reviewed.
- **Ryan, K. L.**, Dao, N. D., Sato, E., Sasaki, T., Okazaki, T. “NEES/E-Defense Base-Isolation Tests: Interaction of Lateral and Vertical Response”, *Proc., 15th World Conference on Earthquake Engineering*, Portuguese Society for Earthquake Engineering, Lisbon, Portugal, September 2012, Peer Reviewed.
- Okazaki, T., Sato, E. Sato, T. Sasaki, T. Kajiwara, K., Ryan, K. L., Mahin, S. “NEES/E-Defense Base-Isolation Tests: Performance of Triple Pendulum Bearings”, *Proc., 15th World Conference on Earthquake Engineering*, Portuguese Society for Earthquake Engineering, Lisbon, Portugal, September 2012, Peer Reviewed.
- Soroushian, S., Ryan, K. L., Maragakis, E., Wieser, J., Sasaki, T., Sato, E., Okazaki, T.,

Tedesco, L., Zaghi, A. E., Mosqueda, G., Alvarez, D. “NEES/E-Defense Tests: Seismic performance of Ceiling/Sprinkler/Piping Nonstructural Systems in Base-Isolated and Fixed-Base Building”, *Proc., 15th World Conference on Earthquake Engineering*, Portuguese Society for Earthquake Engineering, Lisbon, Portugal, September 2012, Peer Reviewed.

- **Ryan, Keri L.**, Dao, Nhan D., Sato, Eiji, Sasaki, Tomohiro, Okazaki, Taichiro. “Aspects of isolation device behavior observed from full scale testing of an isolated building at E-Defense”, *Proceedings of 2012 ASCE Structures Congress*, Chicago, IL, March, 2012, Peer Reviewed.
- Soroushian, Siavash, **Ryan, Keri L.**, Maragakis, Manos, Sato, Eiji, Sasaki, Tomohiro, Okazaki, Taichiro, Tedesco, Lee, Zaghi, Arash E., Mosqueda, Gilberto and Alvarez, Dennis. “Seismic response of ceiling/sprinkler piping nonstructural systems in NEES TIPS/NEES Nonstructural/NIED collaborative tests on a full scale 5-story building”, *Proceedings of 2012 ASCE Structures Congress*, Chicago, IL, March, 2012.
- **Ryan, Keri L.**, Sato, Eiji, Sasaki, Tomohiro, Dao, Nhan D., Okazaki, Taichiro. “Observations from NEES/E-Defense Tests of a Full Scale Isolated and Fixed-Base Building”, *Proc., 9th International Conference on Urban Earthquake Engineering/4th Asia Conference on Earthquake Engineering*, Tokyo, Japan, March, 2012.
- Soroushian, Siavash, **Ryan, Keri L.**, Maragakis, Manos, Sato, Eiji, Sasaki, Tomohiro, Okazaki, Taichiro, Tedesco, Lee, Zaghi, Arash E., Mosqueda, Gilberto, and Alvarez, Dennis. “Seismic response of nonstructural systems in NEES TIPS/NEES Nonstructural/NIED collaborative tests”, *Proc., 9th International Conference on Urban Earthquake Engineering/4th Asia Conference on Earthquake Engineering*, Tokyo, Japan, March, 2012.
- Dao, Nhan D., **Ryan, Keri L.**, Sato, Eiji, Okazaki, Taichiro, Mahin, Stephen A., Zaghi, Arash E., Kajiwara, Koichi, Matsumori, Taizo. “Experimental evaluation of an innovative isolation system for a lightweight steel moment frame building at E-Defense”, *Proceedings of 2011 ASCE Structures Congress*, Las Vegas, NV, April, 2011.
- **Ryan, Keri L.**, Dao, Nhan D. and Mahin, Stephen A. “Strong shaking of a steel frame building with an innovative isolation system at E-Defense”, *Proceedings of 2011 NSF Engineering Research and Innovation Conference*, Atlanta, Georgia, January, 2011.
- **Ryan, K. L.**, Erduran, E., Sayani, P. J., and Dao, N. D. “Comparative seismic response of code designed conventional and base-isolated buildings to scenario events”, *Proc., 9th U.S. National and 10th Canadian Conference on Earthquake Engineering*, Toronto, Canada, July 25-29, 2010, Peer Reviewed.
- **Ryan, K. L.**, Sayani, P. J., Dao, N. D., Abraik, E. and Baez, Y. M. “Comparative life cycle analysis of conventional and base-isolated theme buildings”, *Proc., 9th U.S. National and 10th Canadian Conference on Earthquake Engineering*, Toronto, Canada, July 25-29, 2010, Peer Reviewed.
- **Ryan, K. L.**, Arendt, L. A. and Larsen, D. “A critical examination of design review for seismic isolated buildings”, *Proc., 9th U.S. National and 10th Canadian Conference on Earthquake Engineering*, Toronto, Canada, July 25-29, 2010, Peer Reviewed.

- Erduran, E. and **Ryan, Keri L.** “Torsional behavior of steel braced frames”, *Proc., 9th U.S. National and 10th Canadian Conference on Earthquake Engineering*, Toronto, Canada, July 25-29, 2010, Peer Reviewed.
- Mosqueda, G., Masroor, A., Sanchez, J. and **Ryan, K.** “Performance limit states of seismically isolated buildings with elastomeric bearings”, *Proc., 9th U.S. National and 10th Canadian Conference on Earthquake Engineering*, Toronto, Canada, July 25-29, 2010, Peer Reviewed.
- **Ryan, Keri L.**, Sayani, Prayag, Baez, Yolanda, and Mitrani-Reiser, Judith. “Comparative life cycle performance assessment of conventional and seismic isolated buildings”, *JSSI 15th Anniversary Symposium*, Tokyo, Japan, September 16-18, 2009.
- **Ryan, Keri L.**, Sayani, Prayag J. and Erduran, Emrah. “Comparative performance assessment of conventional and seismic isolated buildings: an overview”, *2009 NSF Engineering Research and Innovation Conference*, Honolulu, HI. June 22-25, 2009.
- **Ryan, Keri L.** and Hu, Wenying, “Effectiveness of partial isolation of bridges for improving column performance”, *ASCE Structures Congress*, Austin, TX. April 30-May 2, 2009.
- **Ryan, Keri L.**, Mahin, Stephen A., and Mosqueda, Gilberto. “Introduction to NEES TIPS: Tools for isolation and protective systems”, *18th Analysis and Computation Specialty Conference, ASCE Structures Congress*, Vancouver, British Columbia, Canada. April 24-27, 2008. Peer Reviewed.
- Sayani, Prayag J. and **Ryan, Keri L.** “Evaluating performance in seismic-isolated buildings using performance indexes”, *18th Analysis and Computation Specialty Conference, ASCE Structures Congress*, Vancouver, British Columbia, Canada. April 24-27, 2008. Peer Reviewed.
- Black, Cameron, Kelly, James, Mayes, Ronald, Morgan, Troy, **Ryan, Keri**, Sinclair, Mark, Wray, Gordon, Vignos, René. “Proposed reformulation of static lateral response procedure for simplified base isolated design”, *76th Annual SEAOC Convention*, Lake Tahoe, CA, Sept. 26-29, 2007.
- Shafieezadeh, Abdollah, **Ryan, Keri** and Chen, YangQuan. “Fractional order LQR for optimal robust control of a simple structure”, *2007 ASME Design Engineering Technical Conferences*, Las Vegas, NV, Sept. 4-7, 2007. Peer Reviewed.
- **Ryan, Keri L.** and York, Kelby. “Vertical distribution of seismic forces for simplified design of base isolated buildings”, *ASCE Structures Congress*, Long Beach, CA, May 16-19, 2007.
- **Ryan, Keri L.**, Kelly, James M. and Chopra, Anil K. “Formulation and implementation of a lead-rubber bearing model including material and geometric nonlinearities”, *17th Analysis and Computation Specialty Conference, ASCE Structures Congress*, May 18-21, 2006. Peer Reviewed.
- **Ryan, Keri L.**, Morgan, Troy A. and Sayani, Prayag. “Consistent performance comparison of seismic-isolated and fixed-base buildings”, *Eighth U.S. National Conference on Earthquake Engineering*, EERI, April 18-22, 2006. Peer Reviewed.
- Earl, Curtis L. and **Ryan, Keri L.** “Effectiveness and feasibility of inter-story isolation systems”, *Eighth U.S. National Conference on Earthquake Engineering*, EERI, April 18-22, 2006. Peer Reviewed.

- **Ryan, Keri L.** and Chopra, Anil K. “Overturning response of base-isolated building considering bearing axial-load effects”, *9th World Seminar on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures*, Anti-Seismic Systems International Society, Kobe, Japan, June 13-16, 2005.
- **Ryan, Keri L.**, Kelly, James M. and Chopra, Anil K. “Experimental observation of axial-load effects in isolation bearings”, Paper No. 1707. *13th World Conference on Earthquake Engineering*, Canadian Association for Earthquake Engineering, Vancouver, British Columbia, Canada, 2004.
- **Ryan, Keri L.** and Chopra, Anil K. “Nonlinear response spectra for isolated buildings”, *ASCE Structures Congress*, Seattle, WA, 2003. Peer Reviewed.
- Hall, John F. and **Ryan, Keri L.** “Near-source effects and the isolation provisions of the 1997 UBC”, *ASCE Structures Congress*, New Orleans, LA, 1999.
- **Ryan, Keri** and Hall, John F. "Aspects of building response to near-source ground motions", *Structural Engineers World Congress*, San Francisco, CA, 1998.

Published Research Reports

- White, Leanne, **Ryan, Keri**, and Buckle, Ian. Thermal Gradients in Southwestern United States and the Effect on Bridge Bearing Loads. *CCEER Report No. 17-01*. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2017.
- Guzman Pujols, Jean C., and **Ryan, Keri L.** Slab Vibration and Horizontal-Vertical Coupling in the Seismic Response of Irregular Base-Isolated and Conventional Buildings, *CCEER Report No. 16-10*, Center for Civil Engineering Earthquake Research, University of Nevada, Reno, Nevada, 2017.
- Jones, Jared, **Ryan, Keri**, Saiidi, Mehdi Saiid. Toward Successful Implementation of Prefabricated Deck Panels to Accelerate the Bridge Construction Process. *CCEER Report No. 16-05*. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2016.
- Camila, Coria B., **Ryan, Keri L.**, Dao, Nhan D. Response of Lead-Rubber Bearings in a Hybrid Isolation System During a Large Scale Shaking Experiment of an Isolated Building. *CCEER Report No. 15-09*. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2015.
- Zargar Shotorbani, Hamed, **Ryan, Keri L.** Analytical and Experimental Study of Gap Damper System to Limit Seismic Isolator Displacements in Extreme Earthquakes. CCEER Report No. 15-04. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2015. <http://www.unr.edu/cceer/publications/2015/15-4>
- Dao, Nhan D., **Ryan, Keri L.** Seismic Response of a Full-scale 5-story Steel Frame Building Isolated by Triple Pendulum Bearings under 3D Excitations. CCEER Report No. 15-01. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2015. <http://www.unr.edu/cceer/publications/2015/15-1>
- Guzman Pujols, Jean, C., **Ryan, Keri L.** Development of Generalized Fragility Functions for Seismic Induced Content Disruption. CCEER Report No. 13-19. Center for Civil

Engineering Earthquake Research, University of Nevada, Reno, 2013.
<http://www.unr.edu/cceer/publications/2013/13-19>

- Mohebbi, Alireza., **Ryan, Keri L.**, Sanders, David H. *Seismic Response of a Highway Bridge with Structural Fuses for Seismic Protection of Piers*. CCEER Report No. 13-18. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2013.
<http://www.unr.edu/cceer/publications/2013/13-18>
- **Ryan, Keri L.**, Coria, Camila B., Dao, Nhan D. *Large Scale Earthquake Simulation of a Hybrid Lead Rubber Isolation System Designed with Consideration of Nuclear Seismicity*, CCEER Report No. 13-09. Center for Civil Engineering Earthquake Research, University of Nevada, Reno, 2013. <http://www.unr.edu/cceer/publications/2013/13-9>
- **Ryan, Keri L.** and Richins, Brian. *Design, Analysis and Performance Evaluation of a Hypothetical Seismically Isolated Bridge on Legacy Highway*, Report No. UT-11.01, Utah Department of Transportation, 2011.
- Hu, Wenying and **Ryan, Keri L.** *Exploratory Study of Partial Isolation of Highway Bridges*, Report No. UT-11.03, Utah Department of Transportation, 2011.
- Wilson, Nash and **Ryan, Keri L.** *Seismic Retrofit Guidelines for Utah Highway Bridges*, Report No. UT-09-06, Utah Department of Transportation, 2009.
- Shafieezadeh, Abdollah, Hu, Wenying, Erduran, Emrah and **Ryan, Keri L.** *Seismic Vulnerability Assessment and Retrofit Recommendations for State Highway Bridges: Case Studies*, Report No. UT-09-08, Utah Department of Transportation, 2009.
- **Ryan, Keri L.** and Chopra, Anil K. *Estimating the Seismic Response of Base-Isolated Buildings Including Torsion, Rocking, and Axial-Load Effects*, EERC Rep. No. 2005-01, Earthquake Engineering Research Center, University of California, Berkeley, CA, 2005.

Published Datasets

- Zargar, Hamed, **Ryan, Keri**. "System Test of a Base-Isolated Building", Network for Earthquake Engineering Simulation (distributor), Dataset, 2015, DOI:10.4231/D37W6766.
- Zargar, Hamed, **Ryan, Keri**. "System Test of a Base-Isolated Building with Gap Damper", Network for Earthquake Engineering Simulation (distributor), Dataset, 2015, DOI:10.4231/D3445HD26.
- Rawlinson, Taylor, Marshall, Justin, **Ryan, Keri**, Zargar, Hamed (2014). "Component Test of a Gap Damper System to Control Isolator Displacements in Extreme Earthquakes", Network for Earthquake Engineering Simulation (distributor), Dataset, DOI:10.4231/D30V89J0P.
- Becker, T., Mahin, S., Neighbor, W., **Ryan, K. L.** *Bi-Directional Characterization of Triple Friction Pendulum Isolators*. Network for Earthquake Engineering Simulation Database, 2013, 2013, DOI:10.4231/D3R20RW69.
- **Ryan, K. L.**, Sato, E., Sasaki, T., Okazaki, T., Guzman, J., Dao, N., Soroushian, S., Coria, C. *Full Scale 5-story Building in Fixed-Base Condition at E-Defense*. Network for Earthquake Engineering Simulation Database, 2013, DOI:10.4231/D3NP1WJ3P.

- **Ryan, K. L.**, Sato, E., Sasaki, T., Okazaki, T., Guzman, J., Dao, N., Soroushian, S., Coria, C. *Full Scale 5-story Building with LRB/CLB Isolation System at E-Defense*. Network for Earthquake Engineering Simulation Database, 2013, DOI:10.4231/D3SB3WZ43.
- **Ryan, K. L.**, Sato, E., Sasaki, T., Okazaki, T., Guzman, J., Dao, N., Soroushian, S., Coria, C. *Full Scale 5-story Building with Triple Pendulum Bearings at E-Defense*. Network for Earthquake Engineering Simulation Database, 2013, DOI:10.4231/D3X34MR7R.

Presentations at Professional Meetings

- “NHERI Tall Wood Project: Full-scale seismic test of a 10-story mass timber building in 2020”, NHERI@UC San Diego 4th Users Training Workshop, San Diego, CA (presentation given remotely), Dec. 14, 2018.
- “Influence of Vertical Ground Shaking on Design of Bridges Isolated with Friction Pendulum Bearings”, PEER Researchers’ Workshop, Richmond, CA, August 8, 2018.
- “Exterior Facades”, *Vertically Distributed Nonstructural Components (vNCS) Workshop*, University of California, San Diego, July 18, 2018.
- “ASCE 7-16 Lateral Forces for Static Design of Base-Isolated Buildings”, *Eleventh U.S. National Conference on Earthquake Engineering*, Earthquake Engineering Research Institute, Los Angeles, CA, June 26, 2018.
- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically-Isolated Building”, *Retirement Symposium and Celebration of the Career of Anil K. Chopra*, Berkeley, CA, Oct. 2, 2017.
- “Experimental Evaluation of Alternative Low Damage Solutions for Reinforced Concrete Walls” (Poster Presentation, with Stephen Blount, Richard Henry, Yiqiu Lu, Zhibin Li, Kenneth Elwood), *2017 QuakeCoRE Annual Meeting*, Taupo, New Zealand, Sept. 4-6, 2017.
- “Development and Full-Scale Validation of Resilience-Based Seismic Design of Tall Wood Buildings: the NHERI Tall Wood Project”, *2017 New Zealand Society for Earthquake Engineering (NZSEE) Conference and Anti-Seismic Systems International Society 15th World Conference on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures*”, Wellington, New Zealand, April 29, 2017.
- “Influence of Base Frame/Slab Stiffness on Seismic Loading of Hybrid Isolation Systems”, *2017 New Zealand Society for Earthquake Engineering (NZSEE) Conference and Anti-Seismic Systems International Society 15th World Conference on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures*”, Wellington, New Zealand, April 28, 2017.
- “Experimental Validation of a Gap Damper to Control the Displacement Demands in a Seismically Isolated Building” (Poster Presentation), *16th World Conference on Earthquake Engineering*, Santiago, Chile, January 12, 2017.
- “Fundamental Dynamics of 3-Dimensional Seismic Isolation”, *16th World Conference on Earthquake Engineering*, Santiago, Chile, January 11, 2017.

- “Horizontal-Vertical Coupling of a Building Frame System in Shake Table Testing to 3D Motions” (Poster Presentation), *QuakeCoRE Annual Meeting*, Taupo, NZ, Sept. 2016.
- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically Isolated Building”, *EERI Annual Meeting*, San Francisco, CA, April 8, 2016.
- “Active Learning and Engagement in Solid Mechanics”, *2015 ASEE Annual Conference and Exposition*, Seattle, WA, June 15, 2015.
- “Influence of Vertical Excitation in the NEES/E-Defense Base Isolation Tests”, *10th U.S. National Conference on Earthquake Engineering*, Anchorage, AK, July 24, 2014.
- “Future Directions in Seismic Protective Systems Research”, *10th NEES/E-Defense Planning Meeting*, Kyoto, Japan, Dec. 12, 2013.
- “Overview of NEES/E-Defense Test Program” (with Camila Coria), *NEES TIPS Wrap-Up Workshop: Taking Stock of What We’ve Learned*, San Diego, CA, September 18, 2013.
- “Influence of Vertical Excitation in the E-Defense Tests”, *NEES TIPS Wrap-Up Workshop: Taking Stock of What We’ve Learned*, San Diego, CA, September 18, 2013.
- “Influence of Vertical Excitation and the Response of Nonstructural Systems in the NEES/E-Defense Base Isolation Tests”, *NEES Quake Summit 2013*, Reno, NV, August 8, 2013.
- “NEES E-Defense Base Isolation Tests: Interaction of Horizontal and Vertical Response”, *15th World Conference on Earthquake Engineering*, Lisbon, Portugal, Sept. 26, 2012.
- “NEES E-Defense Tests: Seismic Performance of Ceiling/Sprinkler Piping Nonstructural Systems in Base-Isolated and Fixed-Base Buildings”, *15th World Conference on Earthquake Engineering*, Lisbon, Portugal, Sept. 26, 2012.
- “NEES TIPS/E-Defense Tests of a Full Scale Base-Isolated and Fixed-Base Building”, *NEES Quake Summit 2012*, Boston, MA, July 12, 2012.
- “Aspects of Isolation Device Behavior Observed from Full Scale Testing of an Isolated Building at E-Defense”, *20th Analysis and Computation Specialty Track, ASCE Structures Congress*, Chicago, IL, March 29, 2012.
- “Seismic Interaction of Structural System and Nonstructural Components in the NEES TIPS/NEES Nonstructural/NIED Collaborative Tests at E-Defense”, *ASCE Structures Congress*, Chicago, IL, March 30, 2012.
- “Observations from NEES/E-Defense Tests of a Full Scale Isolated and Fixed Base Building”, *9th International Conference on Urban Earthquake Engineering/4th Asia Conference on Earthquake Engineering*, Tokyo, Japan, March 7, 2012.
- “Introduction of NEES TIPS Test”, *NEES TIPS/E-Defense Full Scale Seismic Isolation Test Program, Participant Workshop*, Miki, Japan, August 17, 2011.
- “NEES/E-Defense Collaborative Program in Base Isolation and Vibration Control”, *NEES/PEER Quake Summit 2010*, San Francisco, CA, Oct. 8, 2010.
- “NEES TIPS: Tools for Isolation and Protective Systems, Overview of Accomplishments and Highlights of Recent Testing”, with Armin Masroor. *NEES/PEER Quake Summit 2010*, San Francisco, CA, Oct. 8, 2010.

- “Effects of Torsion on the Seismic Response of Concentrically Braced Steel Frames”, *9th US National and 10th Canadian Conference on Earthquake Engineering*, July 28, 2010.
- “A Critical Examination of Design Review for Seismic Isolated Buildings”, *9th US National and 10th Canadian Conference on Earthquake Engineering*, July 28, 2010.
- “Comparative Life Cycle Analysis of Conventional and Base-Isolated Theme Buildings”, *9th US National and 10th Canadian Conference on Earthquake Engineering*, July 26, 2010.
- “Social factors that lead to adoption of protective systems: Results of a cross-disciplinary survey”, *NEES 7th Annual Meeting*, Honolulu, HI, June 23, 2009.
- “NEES TIPS: Increasing the Adoption of Seismic Isolation in the U.S.”, *NEES 6th Annual Meeting*, Portland, OR, June 18, 2008.
- “Introduction to NEES TIPS”, *18th Analysis and Computation Specialty Conference, ASCE Structures Congress*, Vancouver, BC, Canada, Apr. 25, 2008.
- “Workshop Overview and TIPS Project Overview”, *Addressing Challenges to the Implementation of Seismic Isolation, Workshop #1*, San Francisco, CA, November 30, 2007.
- “NEES TIPS: Tools to Facilitate Widespread Use of Seismic Isolation and Protective Systems, a NEES/E-Defense Collaboration”, *6th Planning Meeting for NEES/E-Defense Collaboration*, E-Defense, Miki Japan, Sept. 28, 2007.
- “Vertical Distribution of Seismic Forces for Simplified Design of Base Isolated Buildings”, *ASCE Structures Congress*, Long Beach, CA, May 19, 2007.
- “Formulation and Implementation of a Lead-Rubber Bearing Model Including Material and Geometric Nonlinearities”, *17th Analysis and Computation Specialty Conference, ASCE Structures Congress*, St. Louis, MO, May 19, 2006.
- “Experimental Observation of Axial-Load Effects in Isolation Bearings”, *13th World Conference on Earthquake Engineering*, Canadian Association for Earthquake Engineering, Vancouver, British Columbia, Canada, August 4, 2004.
- “Nonlinear Response Spectra for Isolated Buildings”, *ASCE Structures Congress*, Seattle, WA, May 31, 2003.
- “Aspects of Building Response to Near-Source Ground Motions”, *Structural Engineering World Congress*, San Francisco, CA, August 1998.

Invited Presentations

- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically Isolated Building”, *NHERI Lehigh Seminar Series* (webcast), October 29, 2018.
- “Integrating Low Damage Design into Community Resilience Models”, Plenary Session at *QuakeCoRE Annual Meeting*, Taupo, New Zealand, Sept. 6, 2018.
- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically Isolated Building”, *University of Nevada, Reno*, December 1, 2017.

- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically Isolated Building”, *Colorado School of Mines*, November 11, 2017.
- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically Isolated Building”, *Oregon State University*, November 10, 2016.
- “Lessons Learned from 3D Shake Table Testing of a Full-Scale Seismically Isolated Building”, *NZSEE Traveling Lecture*, sponsored by *New Zealand Society for Earthquake Engineering*, Presentations in Auckland, Christchurch, and Wellington, New Zealand, September 2016. Archived seminar link: <https://www.nzsee.org.nz/library/past-seminars/2016-2/prof-keri-ryan-3-dimensional-shake-table-testing-of-a-full-scale-seismically-isolated-building/>
- “NEES Research Impact on Structural Engineering: Value of International Collaborations”, Panelist for Themed Session, *10th U.S. National Conference on Earthquake Engineering*, Anchorage, AK, July 2014.
- “From Large Scale Test Findings to Cost-Benefit Analysis of Base-Isolated Buildings” (with Anthony Giammona, Gilberto Mosqueda, and Stephen Mahin, Presentation was webcast and archived), *NEES/EERI Research to Practice Webinar Series*, November 20, 2013.
- “Exploratory Study of Structural Fuses to Protect Columns of Monolithic Bridges”, *Nevada Department of Transportation*, Carson City, NV, April 25, 2013.
- “Early Observations from the NEES TIPS/E-Defense Collaborative Test Program on Innovative Seismic Isolation Solutions”, (Presentation was webcast and archived), *SEMM Seminar at University of California*, Berkeley, CA, October 24, 2011.
- “NEES/E-Defense Test Program, Objectives and Overview”, *9th NEES/E-Defense Collaborative Earthquake Engineering Research Program Planning Meeting*, Miki, Japan, August 26, 2011.
- “Making the Case for High Seismic Performance”, *Summer Residents at Oak Ridge Apartments*, Logan, UT, June 23, 2010.
- “Modeling and Performance Evaluation of Conventional and Base-Isolated Theme Buildings”, *University of Nevada, Reno*, Reno, NV, February 19, 2010.
- “Modeling and Performance Evaluation of Conventional and Base-Isolated Theme Buildings”, *Forell-Elsesser Engineers*, San Francisco, CA, January 29, 2010.
- “Comparative Life Cycle Performance Assessment of Conventional and Seismic Isolated Buildings”, *JSSI 15th Anniversary Symposium*, Tokyo, Japan, September 16, 2009.
- “Response Control in the U.S. and Introduction to NEES TIPS”, *CIB/W114 Workshop on Response Control and Seismic Isolation of Buildings*, Nanjing, China, November 17, 2008.
- “Modeling and Characterization of Base-Isolation Systems for Estimation of Seismic Response”, *Civil Engineering Seminar, California Institute of Technology*, May 25, 2006.

Funded Projects

- US Forest Service Wood Innovation Fund, “Advancing Tall Mass Timber Buildings

through Seismic Resilience Testing”, Under Contract, Expected Timeline: 07/01/2019 – 06/30-2022, Principal Investigator, \$250,000.

- Department of Energy through subcontract from Los Alamos National Laboratory, “Development of Guidance for Incorporation of Kinematic Soil-Structure-Interaction in the Seismic Design of Nuclear Facilities”, Under Contract, Expected Timeline = 09/01/2019-08/31/2021, Co-Principal Investigator (PI: R. Motamed), \$357,000.
- National Science Foundation, “RAPID/Collaborative Research: Japan-U.S. Collaboration on the Seismic Resilience of Wood-frame Building Systems”, 05/15/2018-05/14/2019, Co-Principal Investigator (PI: M. Koliou, Award to Texas A&M Experiment Station, No Subaward to UNR), \$187,000.
- Pacific Earthquake Engineering Research (PEER) Center Transportation Systems Research Program, “Influence of Vertical Ground Shaking on Design of Bridges Isolated with Friction Pendulum Bearings”, 12/15/2017-08/14/2019, Principal Investigator, \$45,031.
- Department of Energy through subcontract from Los Alamos National Laboratory, “Toward Development of Site-Specific Vertical Ground Motions for Resiliency of Nuclear Facility”, 09/01/2017-08/31/2019, Co-Principal Investigator (PI: R. Motamed), \$231,622.
- Ministry of Business, Innovation and Employment, New Zealand through subcontract from University of Auckland, “Exploration of Lower Damage Modifications to Conventional Lightly Reinforced Concrete Walls”, 01/01/2017-12/31/2017, Principal Investigator, \$28,757.
- Department of Energy through subcontract from Lawrence Berkeley National Laboratories, “An Optically Based Sensor System for Rapidly Assessing the Response of Critical Nuclear Facilities”, 10/01/2016-09/30/2017, Co-Principal Investigator (PI: I. Buckle), \$140,000.
- National Science Foundation, “Collaborative Research: A Resilience-based Seismic Design Methodology for Tall Wood Buildings”, 09/01/2016-08/31/2020, Principal Investigator, \$180,000.
- Federal Highway Association through SOLARIS University Transportation Research Center and Nevada Department of Transportation, “Cost and Ecological Feasibility of UHPC in Highway Bridges”, 03/01/16 – 08/31/17, Co-Principal Investigator (PI: M. Moustafa), \$74,063.
- Federal Highway Association through SOLARIS University Transportation Research Center and Nevada Department of Transportation, “Exploratory Study: Influence of Thermal Gradients Induced by Southwest Desert Climate on Bridge Durability”, 06/01/16 – 07/31/17, Principal Investigator, \$70,596.
- Nevada Department of Transportation, “Toward Successful Implementation of Prefabricated Deck Panels to Accelerate the Bridge Construction Process”, 01/28/2015-1/30/2016, Principal Investigator, \$115,869
- Nevada Department of Transportation, “Development of Earthquake-Resistant Precast Pier Systems for Accelerated Bridge Construction in Nevada”, 01/28/2015-09/31/2017, Co-Principal Investigator (PI: M. Saiidi), \$209,617.

- National Science Foundation, “Three-Dimensional Isolation System for Building Resilience to Earthquake Hazard”, 08/01/2014-07/31/2018, Principal Investigator, \$359,132.
- “Full Scale Seismic Isolation Test Program at E-Defense: Collaboration of NEES TIPS/NEES Nonstructural/NIED”, August 2011, Principal Investigator, U.S. side funding from 3 projects below and about \$1 million in industry contributions from 8 different companies.
- Nuclear Regulatory Commission, "Large Scale Simulation of a Base-Isolated Structure with Elastomeric Bearings to Extreme Earthquakes", 08/30/11-02/15/13, Principal Investigator, \$280,463.
- National Science Foundation, "Collaborative Research: An Innovative Gap Damper to Control Seismic Isolator Displacements in Extreme Earthquakes", 07/01/11-06/30/15, Principal Investigator, \$194,994.
- National Science Foundation, "NEESR-GC: Simulation of the Seismic Performance of Nonstructural Systems, Supplement for E-Defense Tests", Supplement awarded February 2011, Unofficial Co-Principal Investigator, \$210,000.
- Utah Department of Transportation “Seismic Isolation Bearings for Accelerated Bridge Construction”, 04/01/08-04/30/10, Principal Investigator, \$63,305.
- National Science Foundation, NEES Research, “NEESR-SG: TIPS: Tools to Facilitate Widespread Use of Isolation and Protective Systems, a NEES/E-Defense Collaboration”, 10/01/07-09/30/13, Principal Investigator leading team of 5; \$1,709,999 (with \$100,000 supplement awarded August 2010, and \$60,000 supplement awarded July 2012.).
- National Science Foundation through USU’s Advance Program, “Transitional Support”, 05/01/07-06/30/09, Principal Investigator, \$14,500.
- Utah Department of Transportation, “Evaluation of Bridges for Seismic Retrofit”, 09/01/06-08/31/08, Principal Investigator, \$50,123 with Utah Transportation Center match of \$61,123.
- National Science Foundation through USU’s Advance Program, “Collaborative Grant Support: Performance-based Engineering of Base-Isolated Buildings”, 01/01/05-12/31/05, Principal Investigator, \$7580.

Awards and Fellowships

- NEES Outstanding Contributor Award in the category of Outstanding Project Curation. For curation of the project *TIPS – Tools to Facilitate Widespread Use of Isolation and Protective Systems* in the NEES Project Warehouse. Awarded in 2014.
- Travel Award to attend *10th Planning Meeting for NEES/E-Defense Collaboration*, Kyoto, Japan, Dec. 11-13, 2013.
- Travel Award to attend *9th International Conference on Urban Earthquake Engineering/4th Asia Conference on Earthquake Engineering*, Tokyo, Japan, March, 2012.
- JSPS Fellowship for Research in Japan – Short Term, Japan Society for the Promotion of Science. Funded travel to Japan in August-September 2011.

- Research featured in USU Research Calendar for 2009.
- *Million Dollar Dinner*, Recognized for earning more than \$1 million in sponsored projects for FY08.
- NEES Travel Award to attend *6th Planning Meeting for NEES/E-Defense Collaboration*, E-Defense, Miki City, Japan, Sept. 27-29, 2007.
- NACADA Outstanding New Advisor Certificate of Merit – Faculty Academic Advising 2007.
- USU Outstanding New Advisor Award – Faculty Academic Advising 2006.
- Participant and Travel Award to attend *NSF WEE '06 – Workshop for the Advancement and Retention of Underrepresented and Minority Engineering Educators*, Arlington, VA. March 5-8, 2006.
- NEES Young Researcher Travel Award to attend the *Fourth NEES Annual Meeting*, June 21-23, 2006.
- Dean's College of Engineering Merit Based Fellowship, UC Berkeley, 2003.
- National Science Foundation Graduate Research Fellowship, 1998 – 2001.
- Structural Engineers Association of Southern California Auxiliary Outstanding Student Award, 1998.
- Donald S. Clark Award, Caltech, 1997.
- Summer Undergraduate Research Fellowship, Caltech, 1997.
- Doris S. Perpall Speaking Competition - 3rd Place, Caltech, 1997.
- Structural Engineers Association of Southern California Auxiliary Outstanding Student Award, 1997.
- Summer Undergraduate Research Fellowship, Caltech, 1996.

Professional Memberships

- American Society of Civil Engineers (ASCE)
 - Seismic Effects Committee
 - Structural Control Committee
- Earthquake Engineering Research Institute (EERI)
- Consortium of Universities for Research in Earthquake Engineering (CUREE)
 - Board of Directors, Treasurer 2015-2016

Professional Service Activities

- Member of ASCE 41-17 Task Group for revising Chapter 14 of ASCE 41-23, 2019.
- Member of ASCE 7-16 Task Committee 12 for revising Chapters 17 and 18 of ASCE 7-22, 2019.

- Co-organized the Vertically Distributed Nonstructural Components (vNCS) Workshop, University of California, San Diego, July 18, 2018.
- Coordinator of Conversation with Former Students and Collaborators for EERI Oral History: Anil K. Chopra, 2018-2019.
- Editorial Board Member for *Earthquake Engineering and Structural Dynamics*, Appointment commencing July 2018.
- Chaired the Overall Organizing Committee and Fundraising Committee for Retirement Symposium and Celebration of the Career of Anil K. Chopra, Oct. 2-3, 2017. Oversaw all aspects of organization; emceed the main event.
- Member of *Center for Infrastructure Education and Transformation*, 2014-2016. A collaboration of faculty in civil engineering departments to share resources for teaching infrastructure, and develop a model infrastructure course. Led the development of a model lesson in engineering communication. Participated in summer workshops in 2014, 2015 and 2016.
- Participant of *Community Development of a Large-Scale Seismically Excited Building Testbed*, in conjunction with 2nd NHERI@UCSD 2nd User Training Workshop for the Large High Performance Outdoor Shake Table (LHPOST), Dec. 12-13, 2016.
- Participant of *DesignSafe-ci User Requirements Workshop*, Objective was to obtain requirements from the Natural Hazards Engineering research community for the DesignSafe cyberinfrastructure and facilitate collaboration among the expanded NHERI community, Jan. 11-12, 2016.
- ATC-120: Seismic Analysis and Design of Nonstructural Components and Systems, Peer Review Panel for Phase I, 2015-2016. This project aims to improve technical aspects of nonstructural system design in areas of largest impact on public safety and economic welfare, by identifying and resolving inconsistencies between current design requirements and observed or expected performance of nonstructural building systems. Reviewed Phase I report and added contributions from recent nonstructural component testing at UNR and E-Defense.
- Member of ASCE 41-17 Task Group for revising Chapter 14 of ASCE 41-14, 2014-2016.
- Supporting member of NEHRP/Provisions Update Committee and ASCE 7-16 Task Committee 12 for revising Chapters 17 and 18 of ASCE 7-16, 2013-2015.
- Associate Editor for *Journal of Structural Engineering*, 2012-2018.
- Workshop Organization
 - NEES TIPS Wrap-Up Workshop, Sept. 18, 2013. Lead Coordinator. This workshop communicated the outcomes of the NEES TIPS project to about 30 participants, consisting primarily of practicing engineers.
 - NEES TIPS/E-Defense Full Scale Seismic Isolation Test Program, Participant Workshop, August 17-19, 2011. Lead Coordinator. This workshop attracted about 30 participants to the E-Defense site to participate in the shake table tests and continue the plan to promote wider implementation of seismic isolation.
 - TIPS: Addressing Challenges to the Adoption of Seismic Isolation Workshop #1, Nov. 30, 2007. Lead Coordinator. This one day workshop attracted 50 participants (engineers, architects, building owners and developers, code regulators) to identify the

- obstacles to seismic isolation and develop a plan to make such systems more attractive to non-engineers
- Co-organized NEES/E-Defense Blind Analysis Contest for full-scale base isolation tests in 2011. I helped announce and advertise the contest, prepare the solution, and archive the solution on NEEShub.
 - Coordinated and moderated NEES/E-Defense Isolation and Control Working Group, 2009-2011. Moderated group discussions during general planning meetings in 2009 and 2010. I organized a special meeting of the ICWC held in conjunction with the EERI Annual Meeting in 2011.
 - Organized conference sessions
 - Highlights of Recent U.S./Japan Collaborative NEES/E-Defense Projects, 10th U.S. National Conference on Earthquake Engineering, July 2014.
 - Highlights of Ongoing Activities of NEES TIPS Project, 9th US National and 10th Canadian Conference on Earthquake Engineering, July 2010.
 - Advances in Seismic Isolation Design Practice in the U.S. and Japan, 18th Analysis and Computation Specialty Conference, ASCE Structures Congress, April 2008.
 - Performance-based Evaluation of Semi-Active and Passive Control Systems, 18th Analysis and Computation Specialty Conference, ASCE Structures Congress, April 2008.
 - Performance-based Evaluation of Passive Control Systems, 18th Analysis and Computation Specialty Conference, ASCE Structures Congress, April 2008.
 - Simplified Analysis, Design and Assessment Tools for Base-Isolated Buildings, ASCE Structures Congress, May 2007.
 - Peer reviewer of journal and conference manuscripts, about 10 manuscripts per year to various journals.
 - NSF Review Panels, Served on 9 review panels for various programs within NSF.
 - Provided user feedback for the NEES NSF site visit held at NSF, August, 2012.
 - Contributed to development of open source analysis program (OpenSees) widely used by the earthquake engineering research community. Recent contribution includes a 3-dimensional element for a triple pendulum bearing with a general friction model.

Professional Development

- International Mass Timber Conference, Portland, OR, March 19-21, 2019.
- The Third International Workshop to Promote Seismic Protective Systems for Civil Structures, PREEMPTIVE SAVI Workshop, Santiago, Chile, Jan 7-8, 2017.
- RSNZ – JSPS Workshop on Evaluation of the Seismic Response of RC Buildings, Auckland, New Zealand, Sept. 8-10, 2016
- The Second International Workshop to Promote Seismic Protective Systems for Civil Structures, a PREEMPTIVE SAVI Workshop, Christchurch and Taupo, New Zealand, August 29 – Sept. 3, 2016.

- Third Infrastructure Education Workshop: Model Infrastructure Course Development, Center for Infrastructure Transformation and Education (CIT-E), University of Wisconsin, Platteville, June 6-8, 2016.
- Second Annual Infrastructure Education Workshop: Pedagogies of Engagement, Center for Infrastructure Transformation and Education (CIT-E), University of Utah, UT, May 27-29, 2015.
- Infrastructure Education Workshop: Establishing an Infrastructure Engineering Course at your Institution, Center for Infrastructure Transformation and Education (CIT-E), Marquette University, Milwaukee, WI, June 25-27, 2014.
- Annual Meeting of the Team-Based Learning Collaborative and TBL 101 Workshop, Team-Based Learning Collaborative, San Diego, CA. February 28, 2013 - March 2, 2013. *Attended meeting and pre-meeting workshop to learn the principles of team-based learning.*
- ASCE Excellence in Civil Engineering Education (ExCEED) Teaching Workshop. University of Arkansas, Fayetteville, AR. July 13-18, 2008. *6-day hands-on workshop to improve teaching effectiveness.*
- MR Damper FHT Workshop at the Colorado NEES Facility. Boulder, CO. Aug. 6-7, 2007. *We submitted a control algorithm for MR dampers that was tested in the laboratory using fast hybrid techniques.*
- Fifth NEES Annual Meeting 2007. NEES Research and Earthquake Engineering Practice: *Strengthening the Connections.* Snowbird, UT. June 19-21, 2007.
- 5th National Seismic Conference on Bridges and Highways, Innovations in Earthquake Engineering for Highway Structures, San Mateo, CA. Sept. 18-20, 2006.
- Seismic Retrofitting Workshop. Held in conjunction with 5th National Seismic Conference on Bridges and Highways, San Mateo, CA. Sept. 17, 2006.
- Fourth NEES Annual Meeting 2006. Broadening Participation Throughout NEES. Arlington, VA. June 21-23, 2006.
- NSF WEE '06 – Workshop for the Advancement and Retention of Underrepresented and Minority Engineering Educators, Arlington, VA. March 5-8, 2006.
- NEES Hybrid Simulation Workshop, University of California, Berkeley, CA. Dec. 12-13, 2005.
- ASCE Structures Congress, Metropolis and Beyond, New York, NY. April 20-24, 2005.
- FEMA 440 Seminar, Improvement of Nonlinear Static Seismic Analysis Procedures, Applied Technology Council, San Francisco, CA. February 15, 2005.