

**CV**  
**JAMIE ELLEN PADGETT**

Associate Professor, Rice University  
Department of Civil and Environmental Engineering  
6100 Main Street • Houston, TX 77005-1827 • United States  
Phone (713) 348-2325 • Fax (713) 348-5268 • Email: jamie.padgett@rice.edu

**Jamie E. Padgett** is an Associate Professor in the Department of Civil and Environmental Engineering at Rice University in Houston, TX. Padgett’s research focuses on the application of probabilistic methods for risk assessment of structures, including the quantification of infrastructure sustainability. Her work addresses the protection of structural infrastructure such as bridges or oil storage tanks exposed to multiple hazards, including earthquakes, hurricanes, or aging and deterioration. She has published over 150 articles in journals or archived conference proceedings in the general area of structural response, reliability and life-cycle assessment. Dr. Padgett was the founding Chair of the ASCE technical committee on Multiple Hazard Mitigation, and is an active member of several national technical committees within ASCE and TRB. She currently serves on editorial boards for the *ASCE Journal of Bridge Engineering*, *Sustainable and Resilient Infrastructure*, and *Earthquakes and Structures*. Dr. Padgett has received several awards and recognitions including the 2011 National Science Foundation Faculty Early Career Development (CAREER) Award and ASCE’s 2009 New Face of Civil Engineering for her work in the field of infrastructure risk assessment and protection. She has also received several mentoring and teaching awards such as the 2014 Rice University Scholar Athlete Favorite Professor Award. Among other projects, Dr. Padgett currently works as a part of several large national or regional research efforts including the NIST Center of Excellence for Community Disaster Resilience (headquartered at Colorado State University), the NSF NHERI Cyberinfrastructure “DesignSafe-CI” (headquartered at University of Texas, Austin), and the Severe Storm Prediction Education and Evacuation from Disasters (SSPEED) Center (headquartered at Rice University).

**I. EARNED DEGREES**

Georgia Institute of Technology, Atlanta, GA	Structural Engineering	Ph.D. 2007
University of Florida, Gainesville, FL	Civil Engineering	B.S. 2003

**II. APPOINTMENTS AND EMPLOYMENT**

2014-	Associate Professor	Rice University, Houston, TX
2007-2014	Assistant Professor	Rice University, Houston, TX
2003-2007	Graduate Research Assistant	Georgia Institute of Technology, Atlanta, GA
2002-2003	Research Assistant	University of Florida, Gainesville, FL
2001	Engineering Intern	St. Johns River Water Management Dist., Palm Bay, FL

**III. AWARDS AND HONORS**

2012 Outstanding Paper Award *ASCE Journal of Performance of Constructed Facilities* (7/2013)  
Scholar/Honor Athlete Favorite Professor, Rice University Athletics Department (2012, 2014)  
Appointed to the Executive Committee for the Technical Council on Lifeline Earthquake Engineering (TCLEE) (2012)  
National Science Foundation Faculty Early Career Development (CAREER) Award (2/2011)  
ASCE/Chi Epsilon Professor of the Year, Rice University, Department of Civil and

Environmental Engineering	(2010)
US Delegate, National Academy of Engineering China-US Frontiers of Engineering	(10/2009)
National Engineering Week Foundation Award, New Faces of Engineering	(2009)
ASCE's New Face of Civil Engineering, American Society of Civil Engineers	(2009)
EERI/FEMA NEHRP Graduate Fellowship in Earthquake Hazard Reduction	(2006-2007)
National Science Foundation Graduate Research Fellowship	(2003-2006)
Georgia Institute of Technology President's Fellowship	(2003-2007)
Science Applications International Corporation Outstanding Paper Award	(11/2006)
Gator Engineering Top 4 Year Scholar, University of Florida	(5/2003)
University Women's Club Scholar, University of Florida	(5/2003)

#### IV. SELECT AWARDS AND HONORS OF ADVISED GRADUATE STUDENTS

Arnold, Candase - National Science Foundation Graduate Research Fellowship	(2010)
McCarthy, Emily - National Science Foundation Graduate Research Fellowship	(2011)
NSF East Asia Summer Institute Fellowship	(2013)
Tapia, Citlali - National Science Foundation Graduate Research Fellowship	(2011)
Ghosh, Jayadipta - Nevada Medal for Distinguished Graduate Student Paper in Bridge Engineering	(2011)

#### V. PUBLICATIONS

##### Journal Papers Published

- [1] Tapia, C., Padgett, J.E. (2016). "Multi-Objective Optimization of Bridge Retrofit and Post-Event Repair Selection to Enhance Sustainability," *Structure and Infrastructure Engineering*, **Vol. 12, No. 1, pp. 93-107**, January, 2016.
- [2] Ramanathan, K., Jeon, J.-S., Zakeri, B., DesRoches, R., Padgett, J.E., (2015). "Seismic response prediction and modeling considerations for curved and skewed concrete box-girder bridges," *Earthquakes and Structures*, **Vol. 9, No. 6, pp. 1153-1179**, December, 2015.
- [3] Wang, Z., L. Duenas-Osorio, Padgett, J.E. (2015). "A new mutually reinforcing network node and link ranking algorithm." *Nature Scientific Reports*, **Vol. 5, pp. 15141; DOI: 10.1038/srep15141**.
- [4] Kameshwar, S., Padgett, J.E. (2015). "Stochastic modeling of geometric imperfections in above ground storage tanks for probabilistic buckling capacity estimation," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, **DOI: 10.1061/AJRUA6.0000846, C4015005**.
- [5] Ataei, N., Padgett, J. E. (2015) "Fragility Surrogate Models for Coastal Bridges in Hurricane Prone Zones," *Engineering Structures*, **Vol. 103, pp. 203-213**.
- [6] Ramanathan, K., Padgett, J.E., DesRoches, R. (2015). "Temporal evolution of seismic fragility curves for concrete box-girder bridges in California," *Engineering Structures*, **Vol. 97, pp. 29-46**, August, 2015.
- [7] Bisadi, V., Padgett, J.E. (2015). "An explicit time-dependent multi-hazard cost analysis methodology for the optimum design of bridge structures," *Computer Aided Civil and Infrastructure Engineering*, **Vol. 30, No. 7, pp. 541-554**, July, 2015.

- [8] Zakeri, B., Padgett, J. E., Ghodrati Amiri, G. (2015). "Fragility Assessment for Seismically Retrofitted Skewed Reinforced Concrete Box Girder Bridges." *ASCE Journal of Performance of Constructed Facilities*, **Vol. 19, No. 2**, pp. 04014043-1-12, April, 2015.
- [9] Ataei, N., Padgett, J. E. (2015) "Influential Fluid-Structure Interaction Modeling Parameters on the Response on Bridges Vulnerable to Coastal Storms," *Structure and Infrastructure Engineering*, **Vol. 11, No. 3**, pp. 321-333, March, 2015.
- [10] Ghosh, J., Padgett, J. E, and Sánchez-Silva, M. (2015). "Seismic Damage Accumulation of Highway Bridges in Earthquake Prone Regions." *Earthquake Spectra*, **Vol. 31, No. 1**, pp. 115-135, February, 2015.
- [11] Resendez, L., Dueñas-Osorio, L., Padgett, J. E. (2014) "The Social Sustainability Index for Small Infrastructure Projects: A Proposition," *Social Sustainability in Economic, Social, and Cultural Context*, **Vol. 11, No. 1**, pp. 27-38.
- [12] Ni Choine, M., O'Connor, A., Padgett, J.E. (2014). "Comparison between the Seismic Performance of Integral and Jointed Concrete Bridges," *Journal of Earthquake Engineering*, **Vol. 19, No. 1**, pp. 172-191, January, 2015.
- [13] Padgett, J. E., Li, Y. (2014) "A Risk-Based Assessment of Sustainability and Hazard Resistance of Structural Design," *ASCE Journal of Performance of Constructed Facilities*, **DOI: 10.1061/(ASCE)CF.1943-5509.0000723, 04014208**, December, 2014.
- [14] Wang, Z., Padgett, J.E, Dueñas-Osorio, L. (2014). "Risk-consistent calibration of load factors for the design of reinforced concrete bridges under the combined effects of earthquake and scour hazards." *Engineering Structures*, **Vol. 79**, pp. 86-95, November, 2014.
- [15] Wang, Z., Padgett, J.E, L. Dueñas-Osorio. (2014). "Toward a uniform risk design of reinforced concrete bridges: a displacement-based approach." *Structural Safety*, **Vol. 50**, pp. 103-112, September, 2014.
- [16] Wang, Z., L. Dueñas-Osorio, Padgett, J.E. (2014). "Influence of scour effects on the seismic response of reinforced concrete bridges," *Engineering Structures*, **Vol. 76**, pp. 202-214, October, 2014.
- [17] Kameshwar, S., Padgett, J.E. (2014). "Multi-hazard risk assessment of highway bridges subjected to earthquake and hurricane hazards," *Engineering Structures*, **Vol. 78**, pp. 300-310, July, 2014.
- [18] Siqueira, G. H., Tavares, D. H., Paultre, P., Padgett, J. E. (2014) "Performance Evaluation of Seismic Isolation as a Retrofit Measure for Typical Multi-Span Concrete Bridges in Eastern Canada," *Engineering Structures*, **Vol. 74**, pp. 300-310, May, 2014.
- [19] Siqueira, G. H., Saidou, A. S., Paultre, P., Padgett, J. E. (2014) "Fragility Curves for Isolated Bridges in Eastern Canada using Experimental Results," *Engineering Structures*, **Vol. 74**, pp. 311-324, May, 2014.
- [20] Wang, Z., L. Dueñas-Osorio, Padgett, J.E. (2014). "Influence of soil-structure interaction and liquefaction on the isolation efficiency of a typical multi-span continuous steel girder bridge," *ASCE Journal of Bridge Engineering*. **Vol. 19, No. 8**, A4014001, August, 2014.

- [21] Zakeri, B., Padgett, J. E., Ghodrati Amiri, G. (2014). "Fragility Assessment of Skewed Single-Frame Concrete Box Girder Bridges." *ASCE Journal of Performance of Constructed Facilities*, Vol. 28, No. 3, pp. 571-582, June, 2014.
- [22] Ghosh, J., Rokneddin, K., Padgett, J. E., and Dueñas-Osorio, L. (2014). "Seismic Reliability Assessment of Aging Highway Bridge Networks with Field Instrumentation Data and Correlated Failures. I: Methodology." *Earthquake Spectra*, Vol. 30, No. 2, pp. 795-817, May, 2014.
- [23] Rokneddin, K., Ghosh, J., Dueñas-Osorio, L. and Padgett, J. E. (2014). "Seismic Reliability Assessment of Aging Highway Bridge Networks with Field Instrumentation Data and Correlated Failures. II: Application." *Earthquake Spectra*, Vol. 30, No. 2, pp. 819-843, May, 2014.
- [24] Ghosh, J., Caprani, C., and Padgett, J. E. (2014). "Influence of Traffic Loading on the Seismic Reliability Assessment of Highway Bridge Structures," *ASCE Journal of Bridge Engineering*, Vol. 19, No. 3, pp. 04013009-1-11, March, 2014.
- [25] McCarthy E, Wright T, Padgett JE, DesRoches R, Bradford P. (2014), "Development of an Experimentally Validated Analytical Model for Modular Bridge Expansion Joint Behavior," *ASCE Journal of Bridge Engineering*, Vol. 19, No. 2, pp. 235-244, February, 2014.
- [26] Padgett, J. E., Tapia, C. (2013) "Sustainability of Natural Hazard Risk Mitigation: A Life-Cycle Analysis of Environmental Indicators for Bridge Infrastructure," *ASCE Journal of Infrastructure Systems*, Vol. 19, No. 4, pp. 395-408, December, 2013.
- [27] Tavares, D., Suescun, J. R., Paultre, P., Padgett, J. E. (2013) "Seismic Fragility of a Highway Bridge in Quebec," *ASCE Journal of Bridge Engineering*, Vol. 18, No. 11, pp. 1131-1139, November, 2013.
- [28] Rokneddin, K., Ghosh, J., Dueñas-Osorio, L., and Padgett, J. E. (2013). "Bridge Retrofit Prioritisation For Ageing Transportation Networks Subject to Seismic Hazards," *Structure and Infrastructure Engineering*, Vol. 9, No. 10, pp. 1050-1066, October, 2013.
- [29] Ghosh, J., Padgett, J. E, and Dueñas-Osorio, L. (2013). "Surrogate Modeling and Failure Surface Visualization for Efficient Seismic Vulnerability Assessment of Highway Bridges." *Probabilistic Engineering Mechanics*, Vol. 34, pp. 189-199, October, 2013.
- [30] Wang, Z., Padgett, J.E, L. Dueñas-Osorio. (2013). "Influence of vertical ground motions on the seismic fragility modeling of a bridge-soil-foundation system." *Earthquake Spectra*, August 2013, Vol. 29, No. 3, pp. 937-962, August, 2013.
- [31] Hossain, M. R., Ashraf, M., Padgett, J. E. (2013) "Risk-based Seismic Performance Assessment of Yielding Shear Panel Device," *Engineering Structures*, Vol. 56, pp. 1570-1579, August, 2013.
- [32] Ataei, N. and Padgett, J. E. (2013). "Probabilistic Modeling of Bridge Deck Unseating during Hurricane Events," *ASCE Journal of Bridge Engineering*, Vol. 18, No. 4, pp. 275-286, April 2013.
- [33] Wang, Z., L. Dueñas-Osorio, Padgett, J.E. (2013). "Seismic response of a bridge-soil-foundation system under the combined effect of vertical and horizontal ground motions." *Earthquake Engineering & Structural Dynamics*. Vol. 42, No. 4, pp. 545-564, April, 2013.

- [34] Li, Y. and Padgett, J. E. (2013) "Closure to 'Review of Methods to Assess, Design for, and Mitigate Multiple Hazards' by Yue Li, Aakash Ahuja, and Jamie E. Padgett," *ASCE Journal of Performance of Constructed Facilities*, **Vol. 27, No. 2, pp. 216-216**, March, 2013.
- [35] Ataei, N. and Padgett, J. E. (2013). "Limit State Capacities for Global Performance Assessment of Bridges Exposed to Hurricane Surge and Wave," *Structural Safety*, **Vol. 41, pp. 73-81**, March 2013.
- [36] Ramanathan, K., DesRoches, R., Padgett, J. E. (2012) "A Comparison of Pre- and Post-Seismic Design Considerations in Moderate Seismic Zones through the Fragility Assessment of Multispan Bridge Classes," *Engineering Structures*, **Vol. 45, pp. 559-573**, December, 2012.
- [37] Stearns, M. and Padgett, J. E. (2012) "Impact of 2008 Hurricane Ike on Bridge Infrastructure in the Houston/Galveston Region," *ASCE Journal of Performance of Constructed Facilities*, **Vol. 26, No. 4, pp. 441-452**, July/August, 2012.
- [38] Karalar, M., Padgett, J. E., Dicleli, M. (2012) "Parametric Analysis of Optimum Isolator Properties for Bridges Susceptible to Near-Fault Ground Motions," *Engineering Structures*, **Vol. 40, pp. 276-287**, July, 2012.
- [39] Tavares, D. H., Padgett, J. E., Paultre, P. (2012) "Fragility Curves of Typical As-Built Highway Bridges in Eastern Canada," *Engineering Structures*, **Vol. 40, pp. 107-118**, July, 2012.
- [40] Padgett, J. E., Spiller, A., Arnold, C. (2012) "Statistical Analysis of Coastal Bridge Vulnerability based on Empirical Evidence from Hurricane Katrina," *Structure and Infrastructure Engineering*, **Vol. 8, No. 6, pp. 595-605**, June, 2012.
- [41] Shafieezadeh, A., Ramanathan, K., Padgett, J. E., DesRoches, R. (2012) "Fractional Order Intensity Measures for Probabilistic Seismic Demand Modeling Applied to Highway Bridges," *Earthquake Engineering and Structural Dynamics*, **Vol. 41, No. 3, pp. 391-409**, March, 2012.
- [42] Li, Y., Ahuja, A., Padgett, J.E., (2012) "A Review of Methods to Assess, Design for, and Mitigate Multiple Hazards," *ASCE Journal of Performance of Constructed Facilities*, **Vol. 26, No. 1, pp. 104-117**, January/February, 2012.
- [43] Ghosh, J., and Padgett, J. E. (2012). "Impact of Multiple Component Deterioration and Exposure Conditions on Seismic Vulnerability of Concrete Bridges." *Earthquakes and Structures*, **Vol. 3, No. 5, pp. 649-673**, January, 2012.
- [44] Dueñas-Osorio, L., Padgett, J. E., (2011) "Seismic Reliability Assessment of Bridges with User Defined System Failure Events," *ASCE Journal of Engineering Mechanics*, **Vol. 137, No. 10, pp. 1-13**, October, 2011.
- [45] Ghosh, J., and Padgett, J. E. (2011). "Probabilistic seismic loss assessment of aging bridges using a component-level cost estimation approach." *Earthquake Engineering & Structural Dynamics*, **Vol. 40, No. 15, pp. 1743-1761**, February, 2011.
- [46] Wright, T., DesRoches, R., and Padgett, J. E. (2011) "Bridge Seismic Retrofitting Practice in the Central and Southeastern United States," *ASCE Journal of Bridge Engineering*, **Vol. 16, No. 1, pp. 82-92**, January, 2011.

- [47] Aygün, B., Dueñas-Osorio, L., Padgett, J. E., DesRoches, R. (2011) "Efficient Longitudinal Seismic Fragility Assessment of a Multispan Continuous Steel Bridge on Liquefiable Soils," *ASCE Journal of Bridge Engineering*, **Vol. 16, No. 1**, pp. 93-107, January, 2011.
- [48] Ramanathan, K., DesRoches, R., Padgett, J. E. (2010) "Analytical Fragility Curves for Multispan Continuous Steel Girder Bridges in Moderate Seismic Zones," *Transportation Research Record: Journal of the Transportation Research Board*, **Vol. 2202, No. 3**, pp. 173-182, December, 2010.
- [49] Ataei, N., Stearns, M. C., Padgett, J. E. (2010) "Response Sensitivity and Probabilistic Damage Assessment of Coastal Bridges under Surge and Wave Loading," *Transportation Research Record: Journal of the Transportation Research Board*, **Vol. 2202, No. 3**, pp. 93-101, December, 2010.
- [50] Padgett, J. E., DesRoches, R., Ehlinger, R. (2010) "Experimental Response Modification of a Four-Span Bridge Retrofit with Shape Memory Alloys," *Structural Control and Health Monitoring*, **Vol. 17, No. 6**, pp. 694-708, October, 2010.
- [51] Padgett, J. E., Ghosh, J., and Dueñas-Osorio, L. (2010). "Effects of liquefiable soil and bridge modelling parameters on the seismic reliability of critical structural components." *Structure and Infrastructure Engineering*, **Vol. 9, No. 1**, pp. 59-77, September, 2010.
- [52] Padgett, J. E., DesRoches, R., Nilsson, E. (2010) "Regional Seismic Risk Assessment of Bridge Network in Charleston, South Carolina," *Journal of Earthquake Engineering*, **Vol. 14, No. 6**, pp. 918-933, July, 2010.
- [53] Ghosh, J., and Padgett, J. E. (2010). "Aging Considerations in the Development of Time-Dependent Seismic Fragility Curves." *Journal of Structural Engineering*, **Vol. 136, No. 12**, pp. 1497-1511, June, 2010.
- [54] Padgett, J. E., Dennemann, K., and Ghosh, J. (2010). "Risk-Based Seismic Life-Cycle Cost-Benefit (LCC-B) Analysis for Bridge Retrofit Assessment." *Structural Safety*, **Vol. 32, No. 3**, pp. 165-173, May, 2010.
- [55] Padgett, J. E., DesRoches, R. (2009) "Retrofitted Bridge Fragility Analysis for Typical Classes of Multispan Bridges," *Earthquake Spectra*, **Vol. 25, No. 1**, pp. 117-141, February, 2009.
- [56] Padgett, J. E., DesRoches, R. (2008) "Methodology for the Development of Analytical Fragility Curves for Retrofitted Bridges," *Journal of Earthquake Engineering and Structural Dynamics*, **Vol. 37, No. 8**, pp. 1157-1174, July, 2008.
- [57] Padgett, J. E., DesRoches, R. (2008) "Three-Dimensional Nonlinear Seismic Performance Evaluation of Retrofit Measures for Typical Steel Girder Bridges," *Engineering Structures*, **Vol. 30, No. 7**, pp. 1869-1878, July, 2008.
- [58] Johnson, R., Padgett, J. E., Maragakis, M. E., DesRoches, R., Saiidi, M. S. (2008) "Large Scale Testing of Nitinol Shape Memory Alloy Devices for Retrofitting of Bridges," *Smart Materials and Structures*, **Vol. 17, No. 3**, April, 2008.

- [59] Padgett, J. E., Nielson, B. G., DesRoches, R., (2008) "Selection of Optimal Intensity Measures in Probabilistic Seismic Demand Models of Highway Bridge Portfolios," *Journal of Earthquake Engineering and Structural Dynamics*, **Vol. 37 No. 4**, pp. 711-725, April, 2008.
- [60] Padgett, J. E., DesRoches, R., Nielson, B. G., Yashinsky, M., Kwon, O.-S., Burdette, N., Tavera, E. (2008) "Bridge Damage and Repair Costs from Hurricane Katrina," *ASCE Journal of Bridge Engineering*, **Vol. 13 No. 1**, pp. 6-14, January, 2008.
- [61] Padgett, J. E., DesRoches, R. (2007) "Sensitivity of Seismic Response and Fragility to Parameter Uncertainty," *ASCE Journal of Structural Engineering*, **Vol. 133, No. 12**, pp. 1710-1718, December, 2007.
- [62] Padgett, J. E., DesRoches, R. (2007) "Bridge Functionality Relationships for Improved Seismic Risk Assessment of Transportation Networks," *Earthquake Spectra*, **Vol. 23, No. 1**, pp. 115-130, February, 2007.

#### **Journal Papers Accepted for Publication**

- [63] Bernier, C., Padgett, J.E., Proulx, J., Paultre, P. (2015). "Seismic Fragility of Concrete Gravity Dams with Modeling Parameter Uncertainty and Spatial Variation: Case Study." *ASCE Journal of Structural Engineering*, **Accepted**, September, 2015.
- [64] Sánchez-Silva, M., Frangopol, D. M., Padgett, J.E., Soliman, M. (2015). "Maintenance and operation of infrastructure systems: A Review." *ASCE Journal of Structural Engineering*, **Accepted**, June, 2015.

#### **Journal Papers in Review**

- [65] McCarthy, E., Padgett, J.E, Bradford, P., Wright, T., DesRoches, R., Hodgson, D. (2016). "Improving Modular Bridge Expansion Joint Seismic Behavior through Shape Memory Alloy Enhancement: Experimental Testing." *Smart Materials and Structures*, **In Review**, Submitted February, 2016.
- [66] Wang, Z., Padgett, J.E, L. Dueñas-Osorio. (2016). "Closed-form time-dependent life-cycle cost analysis based on the hazard function approach." *Journal of Structural Engineering*, **In Review**, Submitted January, 2016.
- [67] Mangalathu, S., Jeon J-S., DesRoches, R., Padgett, J. E., "ANCOVA-based Grouping of Bridge Classes for Seismic Fragility Assessment." *Engineering Structures*, **In Review**, Submitted November, 2015.
- [68] Gidaris, G., Padgett, J.E., Barbosa, A. R., Chen, S., Aguiniga, F., Cerato, A., Cox, D., Webb, B. (2015). "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*, **In Review**, Submitted October, 2015.
- [69] Wang, Z., Padgett, J.E., Ouyang M. (2015). "Life-cycle multi-event resilience of structures considering structural deterioration." *Structural Safety*, **In Review**, Submitted 2015.
- [70] Wang, Z., L. Dueñas-Osorio, Padgett, J.E. (2015). "Equivalent damping model for the direct displacement-based design of reinforced concrete bridges with soil-structure interaction." *Journal*

of Bridge Engineering, **In Review**, Submitted 2015.

- [71] Ni Choine, M., O'Connor, A., Padgett, J.E. (2013). "Impact of Multiple Aging Conditions on Seismic Fragility of Multi-Span Concrete Integral Bridges," *Engineering Structures*, **In Review**, Submitted August, 2013.
- [72] Fuselier, B., Padgett, J.E., Perez, X., Nordstrom, B. (2013). "Rapid Evaluation Survey of Earthquake Damaged Reinforced Concrete Components," *Earthquake Spectra*, **In Review**, Submitted July, 2013.
- [73] Freddi, F., Padgett, J.E., Dall'Asta, A. (2013). "Modeling the Probabilistic Seismic Response of Component Level Engineering Demand Parameters of RC Frames," *Structural Safety*, **In Review**.

**Papers in Conference and Workshop Proceedings** (\* denotes presenter)

- [1] Kameshwar, S. and Padgett, J.E. (2016). "Effect of vehicle bridge interaction on bridge seismic response." Abstract submitted to *8th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2016)*, Foz du Iguacu, Brazil, June 26-30, 2016.
- [2] Mangalathu, S.\*, Jeon J-S., DesRoches, R., Padgett, J. E., "Application of Bayesian Methods to Probabilistic Demand Analyses of Concrete Box-Girder Bridges Subjected to Seismic Excitation", *Proceedings of the Geotechnical and Structural Engineering Congress*, Phoenix, Arizona, February 14-17, 2016.
- [3] Mangalathu, S.\*, Jeon J-S., DesRoches, R., Padgett, J. E., "Analysis of Covariance to Capture the Importance of Bridge Attributes on the Probabilistic Seismic Demand Model", *Proceedings of the 10<sup>th</sup> Pacific Conference on Earthquake Engineering*, Sydney, Australia, November 5-8, 2015.
- [4] Mangalathu, S.\*, Jeon J-S., Soleimani, F., DesRoches, R., Padgett, J. E., Jiang, J., "Seismic Vulnerability of Multi-span Bridges: An Analytical Perspective", *Proceedings of the 10<sup>th</sup> Pacific Conference on Earthquake Engineering*, Sydney, Australia, November 5-8, 2015.
- [5] Kameshwar, S.\* and Padgett, J.E. (2015). "Assessing the effectiveness of stiffener rings in mitigating surge buckling fragility of above ground storage tanks." *Coastal Structures & Solutions to Coastal Disasters Joint Conference*, Boston, Massachusetts, September 9-11, 2015.
- [6] Kameshwar, S.\* and Padgett, J.E. (2015). "Fragility Assessment of Above Ground Petroleum Storage Tanks under Storm Surge." *Proceedings of the 12th International Conference on Applications of Statistics and Probability in Civil Engineering*, Vancouver, Canada, July 12-15, 2015.
- [7] Tapia, C., Padgett, J.E.\* (2014). "Bridge Life-Cycle Sustainability Assessment Based on Poisson and Renewal Earthquake Occurrence Models." *Proceedings of Fourth International Symposium on Life-Cycle Civil Engineering IALCCE 2014*, Tokyo, Japan, November 16-19, 2014.
- [8] Ghosh, J., Padgett, J.E.\* (2014). "Comparative assessment of multiple deterioration mechanisms affecting the seismic fragility of aging highway bridges." *Proceedings of Fourth International Symposium on Life-Cycle Civil Engineering IALCCE 2014*, Tokyo, Japan, November 16-19, 2014.
- [9] Sebastiani, P.E.\*, Padgett, J.E., Petrini, F., Bontempi, F. (2014). "Effectiveness evaluation of seismic protection devices for bridges in the PBEE framework." *Proceedings of the Second International*



*Conference on Vulnerability and Risk Analysis and Management (ICVRAM 2014)*, Liverpool, UK, July 13-16, 2014.

- [10] Kameshwar, S.\*, Padgett, J.E. (2014). "Multi-hazard reliability analysis of bridges based upon damage indices." *7th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2014)*, Shanghai, China, July 7-11, 2014.
- [11] Caprani, C.C.\*, Padgett, J.E., Chiu, W.K. (2014). "Strategies for safety assurance of bridges exposed to multiple climate-related threats." *7th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2014)*, Shanghai, China, July 7-11, 2014.
- [12] Caprani, C.C., Ghosh, J. Padgett, J.E.\* (2014). "Influence of live loads on component and system level highway bridge seismic fragility." Submitted to *7th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2014)*, Shanghai, China, July 7-11, 2014.
- [13] Wang, Z., Duenas-Osorio, L., Padgett, J.E.\* (2014). "Risk-based combination of earthquake and scour hazards for the design of reinforced concrete bridges." Submitted to *7th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2014)*, Shanghai, China, July 7-11, 2014.
- [14] Tapia, C. \*, Padgett, J.E. (2014). "Structural upgrade selection via shortestpath algorithm based on life-cycle sustainability metrics." *Proceedings of the International Conference on Sustainable Development of Critical Infrastructure (IC-SDCI 2014)*, Shanghai, China, May 16-18, 2014.
- [15] Padgett, J.E.\* (2014). "Infrastructure Sustainability in a Multi-Hazard Environment." *Taking Stock and Taking Action: Disaster Research and the Challenges Ahead*, Newark, DE, April 30-May 3, 2014.
- [16] Kubo, H. \*, Carroll, R., Stein, R., Padgett, J.E., Duenas-Osorio, L. (2014). "Infrastructure Needs, Inter Local Cooperation and the Spillover Effect in Distributive Federal Spending." *Southwestern Social Science Association*, San Antonio, TX, April 17, 2014.
- [17] Kameshwar, S.\*, Padgett, J. E. (2014) " Towards risk based multi-hazard resistant design of bridges," *Proceedings of the 45th ASCE Structures Congress*, American Society of Civil Engineers, Boston, MA, April 3-5, 2014.
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### **Refereed Technical Reports**

“Hurricane Katrina: Performance of Transportation Systems,” *ASCE Technical Council on Lifeline Earthquake Engineering Monograph No. 29*, Edited by R. DesRoches, American Society of Civil Engineers, August, 2006.

### **Book Chapters**



Padgett, J. E. and Stearns, M. (2012). Ch 9: Lessons in Bridge Infrastructure Vulnerability (P. Bedient, Ed.). In *Lessons from Hurricane Ike* (pp.106-121). College Station: Texas A&M Press.

## **VI. LECTURES, SEMINARS AND PRESENTATIONS**

### **Invited Talks, Lectures and Seminars**

- [1] Glasscock School for Continuing Education, Rice University, (2015) “Hazard Resilience of Structures and Infrastructure.” Houston, TX, March 11, 2015.
- [2] Tufts University, (2015) “Sustainability and Hazard Risk Mitigation of Infrastructure Subjected to Multiple Threats” Medford, MA, March 19, 2015.
- [3] North Carolina State University, (2015) “Sustainable Solutions for Infrastructure Subjected to Multiple Threats” Raleigh, NC, February 12, 2015.
- [4] University of Texas at Arlington, (2014) “The Pursuit of Sustainable Bridge Infrastructure in the Face of Multiple Hazards” Arlington, TX, October 24, 2014.
- [5] NSF Workshop on Resilient Infrastructure for Sustainable Communities (2014). “Plenary Talk: Fostering sustainability and enhanced multiple hazard resiliency and response,” Washington, DC, USA, June 9-10, 2014.
- [6] American Concrete Institute Houston Chapter, (2014) “Resilience under Multiple Hazards: Case Studies with Concrete Bridges” Houston, TX, May 6, 2014.
- [7] University of Buffalo, (2013) “Assessing the Performance of Bridges Subjected to Multiple Hazards” Buffalo, NY, December 2, 2013.
- [8] FHWA Regional Peer Exchange on HEC-25B – Highways in the Coastal Environment – Assessing Extreme Events, (2013) “Vulnerability Assessment of Bridges in the Houston/Galveston Area” Tallahassee, FL, May 7, 2013.
- [9] Resilience and Adaptation to Climate Risks Workshop: Johnson Space Center and the Houston/Galveston Area, (2012) “Potential for Flooding in the Houston-Galveston Area and Flooding Impacts on Transportation Infrastructure” Houston, TX, March 6, 2012. (with P. Bedient)
- [10] Università Politecnica delle Marche (University of Ancona), (2012) “Structural Sustainability of Risk Mitigation from Natural Hazards,” Ancona, Italy, February 27, 2012.
- [11] University of Houston, (2011) “Life-Cycle Seismic Performance Assessment to Support Sustainability,” Houston, TX, October 19, 2011.
- [12] Centre for Innovation and Professional Training (CAPEX), (2011) “Seismic Vulnerability and Risk Assessment: Caribbean Perspectives,” Santiago, Dominican Republic, October 11, 2011.
- [13] Catholic University of Santo Domingo, (2011) “Seismic Vulnerability and Risk Assessment,” Santo Domingo, Dominican Republic, October 10, 2011.

- [14] University of Florida, (2011) “Probabilistic Analysis of Bridge Infrastructure Susceptible to Hurricanes: Enabling Sustainable Coastal Communities” Gainesville, FL, September 29, 2011.
- [15] Rose School, University of Pavia, (2011) “Life-Cycle Seismic Performance of Bridges,” Pavia, Italy, June 1, 2011.
- [16] Rose School, University of Pavia, (2011) “Probabilistic Methods in Seismic Performance Assessment of Bridges,” Course Lectures, Pavia, Italy, June 2, 2011.
- [17] Rice Engineering Alumni Association, (2010) “Lessons Learned from Gulf Coast Hurricanes on the Vulnerability of Coastal Bridges,” REA Fall Social Faculty Invitee, Houston, TX, November 30, 2010.
- [18] Houston Chapter American Society of Civil Engineers, (2010) “Bridge Performance Under Hurricane Induced Loads,” Houston, TX, November 16, 2010.
- [19] University of Tokyo, (2010) “Fragility and Life-cycle Costs for Aging Bridge Infrastructure Subjected to Seismic Hazards,” Tokyo, Japan, October 25, 2010.
- [20] University of Michigan, (2010) “Seismic Vulnerability and Loss Estimation for Aging Bridge Infrastructure,” EERI Seminar, Ann Arbor, MI, October 1, 2010.
- [21] Georgia Institute of Technology, (2010) “Vulnerability of Bridges under Hurricane Induced Loads,” EERI Seminar, Atlanta, GA, April 1, 2010.
- [22] Georgia Institute of Technology, (2010) “Probabilistic Methods in Earthquake Engineering,” Course Lecture, Atlanta, GA, April 1, 2010.
- [23] 2010 Concrete Bridge Conference, (2010) “Sustainability as a Guide for Selecting and Prioritizing Seismic Upgrades,” Phoenix, AZ, February 26, 2010.
- [24] Northwestern University, (2009) “Assessing the Fragility of Bridges under Multiple Hazards,” Evanston, IL, October 12, 2009.
- [25] FHWA Workshop: Applications of Shape Memory Alloys for Multi-Hazard Mitigation and Long Term Performance in Bridges, (2009) “Potential of Shape Memory Alloys in Multi-Hazard Mitigation of Bridges” McLean, VA, May 15, 2009.
- [26] FHWA Workshop: Applications of Shape Memory Alloys for Multi-Hazard Mitigation and Long Term Performance in Bridges, (2009) “Applications of Shape Memory Alloys in Bridge Restrainers” McLean, VA, May 15, 2009.
- [27] Glasscock School for Continuing Education, Rice University, (2009) “Critical Infrastructure: An Opportunity for Enhancement.” Houston, TX, March 30, 2009. (with L. Duenas-Osorio)
- [28] Structural Engineering Association of Texas, (2009) “Sustainable Bridge Infrastructure Retrofit and Design.” Houston, TX, February 19, 2009.
- [29] Glasscock School for Continuing Education, Rice University, (2009) “Feats of Civil Engineering (Breakthroughs in Engineering: Past, Present, and Future.” Houston, TX, February 16, 2009.

- [30] REDARS Bridge Fragility Modeling Invitational Meeting, (2009) “Fragility Modeling for Bridges in the Central and Southeastern US.” San Francisco, CA, January 30, 2009. (with B. Nielson and R. DesRoches)
- [31] Norman Hackerman Memorial Symposium on the Corroding of America’s Infrastructure, (2008) “Infrastructure Under Stress.” Houston, TX, February 28, 2008.
- [32] Houston Museum of Natural Sciences / Rice University Continuing Education, (2008) “Leonardo da Vinci: Man Inventor Genius--*Contributions to Engineering*.” Houston, TX, April 15, 2008. (with Duenas-Osorio, Nagarajaiah, Spanos)
- [33] Earthquake Engineering Research Institute Annual Meeting, (2008) “Retrofitted Bridge Fragility Curves for Next Generation Seismic Risk Assessment.” New Orleans, LA, February 8, 2008.
- [34] Louisiana State University, (2008) “Protecting Bridges from Natural Hazard Events: Using Probabilistic Methods to Evaluate Vulnerability and Retrofit Viability.” Baton Rouge, LA, January 22, 2008.
- [35] Université de Sherbrooke, (2007) “Seismic Vulnerability Assessment of Highway Bridges: Methodology to Decision Support.” Sherbrooke, QC, Canada, August, 22, 2007.
- [36] Network for Earthquake Engineering, (2007) “Selecting and Pursuing the Ideal Graduate Program.” NEES Undergraduate Research Program Webinar Series, June, 14, 2007.
- [37] University of Colorado, Boulder (2007) “Development of Systems Level Fragility Curves for Comparative Assessment of Bridge Retrofit.” Boulder, CA, March 21, 2007.
- [38] Stanford University (2007) “Design of Resilient and Sustainable Lifeline Systems Using a Probabilistic Approach.” Stanford, CA, March 13, 2007.
- [39] University of Texas, Austin (2007) “Natural Hazard Mitigation and Sustainable Design of Lifeline Systems Using Reliability Tools.” Austin, TX, March 6, 2007.
- [40] University of California, Davis (2007) “Performance-Based Retrofit of Bridges Using a Probabilistic Approach.” Davis, CA, March 1, 2007.
- [41] University of California, Berkeley (2007) “Performance-Based Retrofit of Bridges Using Systems Level Fragility Curves.” Berkeley, CA, February 26, 2007.
- [42] University of Notre Dame (2007) “Seismic Performance Assessment of Retrofitted Bridges through Bridge Fragility Curves.” South Bend, IN, February 5, 2007.
- [43] Rice University (2007) “Fragility Curve Development for Retrofitted Bridges: A Probabilistic Approach to Evaluating Seismic Risk Mitigation Strategies.” Houston, TX, February 2, 2007.

**Other Conference / Workshop Oral Presentations** (not cited above, \* denotes presenter)

- [1] Padgett, J. E.\*, Kameshwar, S. (2014). “Storm impacts on select energy and transportation infrastructure,” *Shell Center for Sustainability Workshop: How sustainable is the Texas coast?* Houston, TX, USA, October 29, 2014.

- [2] Padgett, J. E.\*, Huynh, T., Kameshwar, S. (2013). "Planning and Adapting Transportation Infrastructure: Potential Impacts of Climate Change," *2013 Texas American Planning Association Conference*, Galveston, TX, USA, October 2-5, 2013.
- [3] Padgett, J. E.\* and Kameshwar, S. (2013). "Structural Integrity of Storage Tanks," *SSPEED Conference: Hurricane Ike: 5 Years Later*, Houston, TX, USA, September, 2013.
- [4] Padgett, J. E.\* and Ataei, N. (2012). "Predicting and Evaluating Bridge and Roadway Infrastructure Damage," *SSPEED Conference: Gulf Coast Hurricanes: Mitigation and Response*, Houston, TX, USA, April, 2012.
- [5] Reséndez, L.\*, L. Dueñas-Osorio, and J. E. Padgett (2012). "The social sustainability index for small infrastructure projects: A proposition." *Eighth international conference of environmental, cultural, economic, and social sustainability*, Vancouver, British Columbia, Canada, January 10-12, 2012.
- [6] Dueñas-Osorio, L.\*, and J. E. Padgett, (2011). "Resources-based bridge system reliability assessment." *Structures congress 2011: Don't gamble on your future*, ASCE Structural Engineering Institute (SEI), Las Vegas, Nevada, USA, April 14-16, 2011.
- [7] Turner, L.\* and J. E. Padgett\*, (2011). "Seismic Risk Management for Bridges and Highway Corridors Using ShakeCast: Tools, Developments, and Opportunities," *ASCE/TCLEE Workshop on Challenges and Opportunities for Lifeline Systems Engineering*, La Jolla, CA, USA, February, 2011.
- [8] Padgett, J. E.\*, Stearns, M., Ataei, N. (2010). "Effect of Severe Storms on Galveston Area Bridge Infrastructure," *SSPEED Conference: Ike Revisited*, Houston, TX, USA, September, 2010.
- [9] Padgett, J. E.\* (2009) "System Sustainability: A Criterion for Seismic Retrofit Assessment," *Transportation Research Board (TRB) Annual Meeting*, Washington, D.C., January, 2009.
- [10] Padgett, J. E.\* (2008) "Assessment of Gulf Coast Bridge Infrastructure Performance in Hurricane Events: Lessons from Katrina," *SSPEED Conference: Severe Storm Prediction and Global Climate Impact on the Gulf Coast*, Houston, TX, October, 2008.
- [11] Padgett, J. E.\* (2007) "Seismic Risk Assessment of the Highway System in the Central United States." *NSF US-Italy Workshop on Seismic Design of Bridges*, Pavia, Italy, May, 2007.
- [12] Padgett, J. E.\* and DesRoches, R. (2006) "Bridge Functionality Prediction Leading to Social and Economic Loss Modeling." *NSF ERC Site Review Mid-America Earthquake Center*, Champaign, IL.
- [13] Padgett, J. E.\* and DesRoches, R. (2006) "Application of Fragility Curves and Damage Functionality Relationships in the Transportation Test Bed." *Mid-America Earthquake Center Annual Meeting*, Austin, TX.
- [14] Padgett, J. E. (2006) "Tri-Center Field Mission to Greece." *Mid-America Earthquake Center Annual Meeting*, Austin, TX.
- [15] Padgett, J. E.\* and DesRoches, R. (2005) "Bridge Damage-Functionality Relationships." *NSF ERC Tri-Center Workshop on Transportation Networks*, Las Vegas, NV.

- [16] Padgett, J. E.\* (2005) “Applications of Retrofitted Bridge Fragility Curves for Seismic Risk Mitigation.” *Tokyo Institute of Technology*, Tokyo, Japan.
- [17] Padgett, J. E.\* and DesRoches, R. (2005) “Structural Retrofit Strategies.” *Mid-America Earthquake Center Annual Meeting*, Coral Gables, FL.

**Other Conferences / Workshop Poster Presentations** (not referenced above)

- [1] NAE China-US Frontiers of Engineering (CAFOE) (2009) “Vulnerability Modeling of Bridge Infrastructure under Multiple Threats,” Changsha, China.
- [2] Mid-America Earthquake Center NSF Site Review (2006) “Development of Fragility Curves for Bridge Portfolios.” Champaign, IL.
- [3] Mid-America Earthquake Center NSF Site Review (2006) “A Test Bed Application of Research Tools: Seismic Risk Assessment of Charleston, SC Transportation Network.” Champaign, IL.
- [4] 4<sup>th</sup> Network for Earthquake Engineering Simulation (NEES) Annual Meeting (2006) “Large-Scale Validation of Innovative SMA Recentering Devices—A NEESR Payload Project.” Washington, DC.
- [5] Mid-America Earthquake Center NSF Site Review (2005) “Vulnerability Assessment of Bridges.” Champaign, IL.
- [6] Mid-America Earthquake Center NSF Site Review (2005) “Charleston, SC Transportation Test Bed.” Champaign, IL.
- [7] EERI Annual Meeting (2005) “Bridge Damage-Functionality Relationships & Retrofitted Fragility Curves for Next Generation Seismic Risk Assessment Tools.” Ixtapa, Mexico.
- [8] EERI Annual Meeting (2005) “The Georgia Institute of Technology Chapter of the Earthquake Engineering Research Institute.” Ixtapa, Mexico.
- [9] Mid-America Earthquake Center Research Assistant Symposium (2005) “Retrofit of Bridges in Mid-America.” Coral Gables, FL.
- [10] Mid-America Earthquake Center NSF Site Review (2004) “Fragility and Functionality of Bridges.” Champaign, IL.
- [11] Mid-America Earthquake Center Research Assistant Symposium (2004) “Damage Functionality Relationships for Bridges.” San Juan, Puerto Rico.

**VII. TEACHING EXPERIENCE**

2014-present	<b>Associate Professor</b>	Rice University, Department of Civil and Environmental Engineering, Houston, TX
2007-2014	<b>Assistant Professor</b>	Rice University, Department of Civil and Environmental Engineering, Houston, TX

**CEVE 578: Earthquake Engineering** (2010-Present)



Dr. Vahid Bisadi (Advisor)  
Completed Degree: Ph.D. Civil Engineering, Texas A&M University, October 2012  
Research: Multi-Hazard Risk Assessment with Application to Dry Cask Storage Tanks and Bridge Structures

### **Ph.D. Student Advising**

#### **Current Ph.D. Students at Rice University**

Mr. Carl Bernier (Advisor)  
Degree Sought: Ph.D. Civil Engineering, Rice University  
Research: Risk Assessment of Aboveground Storage Tanks in Hurricane Prone Regions

Mr. Sushreyo Misra (Advisor)  
Degree Sought: Ph.D. Civil Engineering, Rice University  
Research: Multi-Hazard Resilience of Railway Infrastructure

Ms. Navya Vishnu (Advisor)  
Degree Sought: Ph.D. Civil Engineering, Rice University  
Research: Sustainability and Hazard Risk Mitigation of Bridge Infrastructure

Mr. Majid Ebad Sichani (Advisor)  
Degree Sought: Ph.D. Civil Engineering, Rice University  
Research: Multi-Threat Performance Modeling of Nuclear Storage Casks

Mr. Sabarethinam Kameshwar (Advisor)  
Degree Sought: Ph.D. Civil Engineering, Rice University  
Research: Multi-Hazard Risk Assessment of Coastal Structures

#### **Graduated Ph.D. Students at Rice University**

Dr. Jayadipta Ghosh (Advisor)  
Completed Degree: Ph.D. Civil Engineering, Rice University, May, 2013  
Thesis: Parameterized Reliability Assessment and Life-Cycle Analysis of Aging Highway Bridges  
Current Position: Assistant Professor, Indian Institute of Technology, Bombay

Dr. Navid Ataei (Advisor)  
Completed Degree: Ph.D. Civil Engineering, Rice University, May, 2013  
Thesis: Reliability Assessment of Coastal Bridges Vulnerable to Hurricane Events  
Current Position: Mahan Company for Mines & Industrial Development, Tehran, Iran

Dr. Emily McCarthy (Advisor)  
Completed Degree: Ph.D. Civil Engineering, Rice University, May, 2014  
Thesis: Application of Compact, Geometrically Complex Shape Memory Alloy Devices for Seismic Enhancement of Highway Bridge Expansion Joints  
Current Position: Senior Staff Engineer, SGH, Houston, TX

Dr. Zhenghua Wang (Co-Advisor with Leonardo Duenas-Osorio)

Completed Degree: Ph.D. Civil Engineering, Rice University, May, 2014  
Thesis: Risk Based Design of Bridges and Associated Transportation Networks under Natural Hazards  
Current Position: Risk Engineer, ABS, Houston, TX

### **Current Ph.D. Students at Collaborative Universities**

Ms. Farahnaz (Fara) Soleimani' (Co-Advisor with Reginald DesRoches)  
Degree Sought: Ph.D. Civil Engineering, Georgia Institute of Technology  
Research: Influence of Geometrics on Fragility of Reinforced Concrete Bridges in California

Mr. Sujith Mangalathu (Co-Advisor with Reginald DesRoches)  
Degree Sought: Ph.D. Civil Engineering, Georgia Institute of Technology  
Research: Production Analysis of Seismic Fragility of California Bridges

### **Graduated Ph.D. Students at Collaborative Universities**

Dr. Danusa Tavares (Co-Advisor with Patrick Paultre)  
Completed Degree: Ph.D. Civil Engineering, Universite de Sherbrooke, December 2011  
Thesis: Seismic Fragility of Highway Bridges in Quebec  
Current Position: Structural Engineer, Intertechne Consultores S.A., Curitiba, PR Brazil

Dr. Karthik Ramanathan (Co-Advisor with Reginald DesRoches)  
Completed Degree: Ph.D. Civil Engineering, Georgia Institute of Technology, May 2012  
Thesis: Next Generation Seismic Fragility Curves for California Bridges Considering the Evolution of Seismic Design Philosophy  
Current Position: Research Engineer, AIR Worldwide, Boston, MA

Dr. Jazalyn Dukes (Co-Advisor with Reginald DesRoches)  
Completed Degree: Ph.D. Civil Engineering, Georgia Institute of Technology, May 2013  
Thesis: Application of Bridge Specific Fragility Analysis in Seismic Design Process of Bridges in California  
Current Position: Engineer, Naval Surface Warfare Center, Carderock Division, West Bethesda, MD

Dr. Gustavo H. Siqueira (Co-Advisor with Patrick Paultre)  
Completed Degree: Ph.D. Civil Engineering, Universite de Sherbrooke, June 2013  
Thesis: Seismic Vulnerability Assessment of Highway Bridges in Quebec Rehabilitated with Natural Rubber Isolators  
Current Position: Professor, University of Campinas, Campinas, SP Brazil

Dr. Mairead Ni Choine (Co-Advisor with Alan O'Connor)  
Completed Degree: Ph.D. Civil Engineering, Trinity College, Dublin, May 2014  
Thesis: Seismic Reliability Assessment of Aging Integral Bridges  
Current Position: Research Engineer, Roughan & O'Donovan Innovative Solutions, Dublin, Ireland

### **Past Visiting Ph.D. Scholars Supervised**

Mr. Paolo Sebastiani (Advisor: F. Petrini and F. Bontempi)  
Degree Sought: Ph.D. Civil Engineering, Sapienza Università di Roma



Research: Seismic Fragility and Life-Cycle Analysis of Bridges

Dr. Behzad Zakeri (Advisor: G. Ghodrati Amiri)

Completed Degree: Ph.D. Civil Engineering, Iran University of Science and Technology

Research: Seismic Fragility of Curved and Skewed Multi-frame Bridges

Current Position: Post-Doctoral Researcher, Department of Civil Engineering, University of California, Irvine

Dr. Fabio Freddi (Advisor: Andrea Dall'Asta)

Completed Degree: Ph.D. Civil Engineering, Marche Polytechnic University, Ancona, Italy

Research: Probabilistic Performance Assessment of Low Ductility Reinforced Concrete Buildings

Current Position: Post-Doctoral Researcher, Department of Civil, Environmental and Mechanical Engineering, University of Trento

### **M.S. Student Advising**

#### **Graduated M.S. Students at Rice University**

Ms. Citlali Tapia (Advisor)

Completed Degree: M.S. Civil and Environmental Engineering, Rice University, December, 2014

Thesis: Pursuing Life-Cycle Sustainability of Bridges Subjected to Multiple Threats

Current Position: Engineer, Texas Department of Transportation, Houston, TX

Mr. Blaine Fuselier

Completed Degree: M.S. Civil and Environmental Engineering, Rice University, May, 2014

Thesis: Improved Seismic Risk Assessment of Non-ductile Reinforced Concrete Buildings

Current Position: Design Engineer, Walter P. Moore, Houston, TX

Ms. Candase Arnold

Completed Degree: M.S. Civil and Environmental Engineering, Rice University, December, 2011

Thesis: Multi-Failure Mode Risk Assessment of the Houston/Galveston Bridge System to Hurricane Threats

Current Position: Requirements Analyst, Seilevel, Austin, TX

Ms. Kristina Dennemann

Completed Degree: M.S. Civil Engineering, Rice University, December, 2009

Research: Life-Cycle Cost Benefit Analysis for Bridge Seismic Retrofits

Current Position: Graduate Engineer, Janssen & Spaans Engineering, Inc., Houston, TX

Mr. Bayram Aygun (Co-Advisor with Leonardo Duenas-Osorio)

Completed Degree: M.S. Civil Engineering, Rice University, May, 2009

Thesis: Efficient Seismic Fragility Assessment of Highway Bridges on Liquefiable Soils

Current Position: Structural Engineer, Fyfe Europe SA, Ankara, Turkey

#### **Graduated M.S. Students at Collaborative Universities**

Ms. Emily Nilsson (Cleland) (Co-Advisor with Reginald DesRoches)

Completed Degree: M.S. Civil Engineering, Georgia Institute of Technology, May, 2008

Thesis: MAE Center Transportation Testbed

Current Position: Assistant Project Manager, Skanska USA Building Inc., New York, NY

## **Undergraduate Student Advising (Research)**

### **Current Undergraduate Student Researchers at Rice University**

Ms. Juliane Crawford  
Degree Sought: B.S. Civil and Environmental Engineering, Rice University  
Research: Development of a NiTi Shape Memory Alloy Device Library  
Dates: 7/2013-present

### **Past Undergraduate Student Researchers at Rice University**

Ms. Truc Huynh  
Degree Sought: B.S. Civil and Environmental Engineering, Rice University  
Research: Potential Climate Change Impacts and Adaptation Strategies for Coastal Bridges  
Dates: 7/2013-5/2014

Mr. Xoab Perez  
Degree Sought: B.S. Civil and Environmental Engineering, Rice University  
Research: Seismic Analysis of Nuclear Storage Casks  
Dates: 5/2013-5/2014

Mr. Brian Nordstrom  
Degree Sought: B.S. Civil and Environmental Engineering, Rice University  
Research: Post-Earthquake Tagging and Repair Modeling of RC Buildings  
Dates: 5/2013-8/2013

Mr. Peter Fobel  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2012  
Research: Outreach development for structural engineering and natural hazards  
Dates: 8/2011-4/2012

Mr. Andrew Lo  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2013  
Research: Identification of Bridge Design Details Affecting for Post-Hurricane Response  
Dates: 5/2011-8/2011

Mr. Benjamin Berryhill  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2012  
Research: Bridge Inventory and Network Analysis  
Dates: 5/2010-5/2011 (Brown Undergraduate Research Intern)

Ms. Citlali Tapia  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2011  
Research: Life-cycle Modeling of Bridge Sustainability Subjected to Natural Hazards  
Dates: 9/2009-5/2011

Mr. Matt Stearns  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2011  
Research: Simulation of Coastal Bridge Vulnerability under Surge and Wave Loading  
Dates: 9/2009-5/2011 (Brown Undergraduate Research Intern)

Mr. Parag Bathia  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2011  
Research: Use of field condition data for vulnerability modeling  
Dates: 8/2010-5/2011

Ms. Candase Arnold  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2010  
Research: Probabilistic Analysis of Empirical Surge-Damage Data  
Dates: 5/2008-5/2010 (Brown Undergraduate Research Intern)

Ms. Kristina Dennemann  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2009  
Research: Analysis of Sustainable Highway Bridge Infrastructure  
Dates: 5/2008-5/2009 (Brown Undergraduate Research Intern)

Mr. Russell Ehlinger  
Completed Degree: B.S. Civil and Environmental Engineering, Rice University, May 2008  
Research: Modeling of Large Scale SMA Seismic Restrainer Cables  
Dates: 11/2007-5/2008

#### **Past Undergraduate Student Researchers from Other University**

Mr. Mike Romaniuk (exchange student University of Bristol/Rice University)  
Completed Degree: B.S. Mechanical Engineering, University of Bristol, May 2008  
Research: Smart Materials for Protection of Coastal Bridges  
Dates: 11/2007-5/2008

Mr. Karthikanand Chinnakani (visiting scholar from NIT, Triste; co-advised with Phil Bedient)  
Completed Degree: B.S. Mechanical Engineering, NIT Triste, May 2009  
Research: Ideal Multi-Threat Retrofit Combinations  
Dates: 11/2007-2008

Ms. Emily Nilsson (co-advised with Reginald DesRoches)  
Completed Degree: B.S. Civil Engineering, Georgia Institute of Technology, August 2007  
Research: Transportation Testbed  
Dates: 1/2006-5/2007

## **IX. PROFESSIONAL SERVICE**

### **Professional Technical Committee Service and Leadership**

Structural Engineering Institute Technical Committee on *Multiple Hazard Mitigation* (Founding Chair, 7/2010-present)

ASCE Technical Council for Lifeline Earthquake Engineering (TCLEE) (Executive Committee Member, 10/2012-present)

ASCE-7 *General Structural Requirements Subcommittee* (Member, 5/2012-present)

Transportation Research Board *Committee on Seismic Design and Performance of Bridges, AFF50* (Member, 4/2012-present)

ASCE/SEI Technical Council on *Life-Cycle Performance, Safety, Reliability, and Risk of Structural and Infrastructure Systems* (Member, 11/2009-present)

Structural Engineering Institute Technical Committee on *Structural Control* (Member, 10/2007-10/2010)

Structural Engineering Institute Technical Committee on *Seismic Effects* (Member, 10/2007-present)

Structural Engineering Institute Technical Sub-Committee on *Emerging Analysis Methods in Earthquake Engineering* (Control/Leadership Group, 2009-2010) (Member, 10/2008-present)

ASCE Technical Council for Lifeline Earthquake Engineering (TCLEE) Committee on *Earthquake Investigations* (Member, 8/2007-present)

### **Conference Mini-Symposium, Session Organization or Chairmanship**

“Seismic Performance Evaluation of Structures Considering Aging and Deterioration,” Mini-Symposium Co-Organized with Y. Kajita and T. Kitahara, The Fourth International Symposium on Life-Cycle Civil Engineering (IALCCE 2014), Tokyo, Japan, November 16-19, 2014.

“Risk-based Assessment and Mitigation for Multiple Hazards,” Mini-Symposium Co-Organized with Y. Li, 11th International Conference on Structural Safety & Reliability (ICOSSAR 2013), Columbia University, New York, NY, June 16-20, 2013.

“Performance-based, reliability-based, and risk-based design: Rational approaches to mitigate natural and man-made hazards – II,” Session Co-Chaired with A. Taflanidis, 11th International Conference on Structural Safety & Reliability (ICOSSAR 2013), Columbia University, New York, NY, June 16-20, 2013.

“Earthquake VII,” Session Co-Chaired with A. Chateaufneuf, 11th International Conference on Structural Safety & Reliability (ICOSSAR 2013), Columbia University, New York, NY, June 16-20, 2013.

“Life-Cycle Design and Assessment for Bridges Exposed to Corrosion and Other Hazards,” Mini-Symposium Co-Organized with F. Biondini, D. M. Frangopol, and A. Palermo, 6th International Conference on Bridge Maintenance, Safety, and Management (IABMAS 2012), Maggiore, Italy, July 8-12, 2012.

“Current Guidelines and Codes for Lifeline System Design and Retrofit,” Session Co-Chaired with Loren Turner, ASCE/TCLEE Workshop on Challenges and Opportunities for Lifeline Systems Engineering, La Jolla, CA, February, 2011.

“Seismic Risk Assessment and Management of Civil Infrastructure,” Session Co-Chaired with Solomon Tesfamariam, 9<sup>th</sup> Canadian Conference / 10<sup>th</sup> US National Conference on Earthquake Engineering, Toronto, Canada, July, 2010.

“Current Advancements in Bridge Technology,” Session Co-Chaired with Ayaz Malik, 5<sup>th</sup> International Conference on Bridge Management and Safety (IABMAS2010), Philadelphia, PA, July, 2010.

“Modeling of Bridge Seismic Response,” Session Co-Chaired with S. Saiidi, IABMAS2010 5<sup>th</sup> International Conference on Bridge Management and Safety (IABMAS2010), Philadelphia, PA, July, 2010.

“Innovative Bridge System Reliability,” Session Co-Organized with Leonardo Duenas-Osorio, 2010 Structures Congress, Orlando, FL, May, 2010.

“Lifeline Interdependence and Sustainability,” Session Co-Chair, Technical Council on Lifeline Earthquake Engineering (TCLEE 2009) Workshop, Oakland, CA, June, 2009.

“Seismic Fragility of Structures with Protective Systems,” Session Chair, 2009 Structures Congress, Austin, TX, April, 2009.

“Bridge Vulnerability to Extreme Hazards,” Session Chair, 2009 Structures Congress, Austin, TX, April, 2009.

“Seismic and Dynamic Analysis,” International Conference on Bridge Maintenance, Safety, and Management (IABMAS’08), Session Co-Chair, International Conference on Bridge Management and Safety, Seoul, Korea, July, 2008.

### **Journal Editorial Board Service**

Associate Editor and member of founding editorial board, *Sustainable and Resilient Infrastructure*, Taylor and Francis (10/2015-present)

Associate Editor and member of founding editorial board, *Earthquakes and Structures*, Techno-Press (11/2009-present)

Associate Editor, *ASCE Journal of Bridge Engineering*, (4/2010-present)

Guest Associate Editor, *Natural Hazards Review*, (9/2010-present)

Responsible Editor, *Earthquake Spectra*, (2011)

Guest Editor, *ASCE Journal of Structural Engineering*, (9/2015-present)

### **Technical Referee**

#### **Archival Journals - Reviewer**

ASCE Journal of Bridge Engineering  
ASCE Journal of Computing in Civil Engineering  
ASCE Journal of Engineering Mechanics  
ASCE Journal of Infrastructure Systems  
ASCE Natural Hazards Review  
ASCE Journal of Performance of Constructed Facilities

ASCE Journal of Structural Engineering  
Bulletin of Earthquake Engineering  
Computer Aided Civil and Infrastructure Engineering  
Earthquake Engineering and Structural Dynamics  
Earthquake Spectra  
Earthquakes and Structures  
Engineering Structures  
European Journal of Environmental and Civil  
International Journal of Uncertainty, Fuzziness, and Knowledge-Based Systems  
International Journal of Social Sustainability in Economic, Social and Cultural Context  
Journal of Structure and Infrastructure Engineering  
Journal of Waterway, Port, Coastal, and Ocean Engineering  
Probabilistic Engineering Mechanics  
Reliability Engineering and System Safety  
Risk Analysis  
Structural Control and Health Monitoring  
Structural Safety  
Transportation Research Record

#### **Grants - Reviewer**

Louisiana Sea Grant  
National Science Foundation, CMMI  
Natural Sciences and Engineering Research Council of Canada  
Oregon Transportation Research and Education Consortium  
University of Delaware Transportation Center

#### **Awards, Scholarships, Fellowships - Reviewer**

National Science Foundation, Graduate Research Fellowship Program  
Nevada Medal, University of Nevada, Reno

#### **Additional Professional Memberships and Activities**

Earthquake Engineering Research Institute (EERI), Member  
Structural Engineering Association of Texas, Member and Rice University Liaison  
International Association of Bridge Management and Safety, Member  
Consortium of Universities for Research in Earthquake Engineering, Member  
Technical Council on Lifeline Earthquake Engineering (TCLEE) *Hurricane Katrina Reconnaissance Team Member: Assessment of Bridges and Highways*  
Network for Earthquake Engineering Simulation, Member  
Society of Women Engineers, Member  
American Society of Civil Engineers, Member  
American Concrete Institute, Member

## **X. UNIVERSITY SERVICE AND CAMPUS CONTRIBUTIONS**

### **Ph.D. Student Committee Service**

Giaralis, Agathoklis. Ph.D. Civil Engineering, Rice University, May, 2008; *Wavelet Based Response Spectrum Compatible Synthesis of Accelerograms and Statistical Linearization Based Analysis of the Peak Response of Inelastic Systems* (Committee Member)

Sonmez, Ertan. Ph.D. Civil Engineering, Rice University, November, 2009; *Deterministic and Stochastic Responses of Smart Variable Stiffness and Damping Systems and Smart Tuned Mass Dampers* (Committee Member)

Contreras, Michael. Ph.D. Civil Engineering, Rice University, July, 2010; *Adaptive, Intelligent Methods for Real Time Structure Control and Health Monitoring* (Committee Member)

Nakhjavani, Omid. Ph.D. Mechanical Engineering, Rice University, February, 2012; *Developing Innovative Designs with Manufacturing Capability Using the Level Set Method* (Committee Member)

Pasala, Dharma Theja Reddy. Ph.D. Civil Engineering, Rice University, August, 2012; *Control of structural systems using novel adaptive and adaptive-passive devices* (Committee Member)

Huang, Chaojun. Ph.D. Civil Engineering, Rice University, August, 2012; *Structural Health Monitoring System for Deepwater Risers with Vortex-induced Vibration: Nonlinear Modeling, Blind Identification, Fatigue/Damage Estimation and Vibration Control* (Committee Member)

Rokneddin, Keivan. Ph.D. Civil Engineering, Rice University, May, 2013; *Reliability assessment of networked urban infrastructure systems under natural hazards* (Committee Member)

Vermu, Venkata Srivishnu Mohan. Ph.D. Civil Engineering, Rice University, May, 2013; *Seismic Protection of Base Isolated structures* (Committee Member)

Resendez de Lozano, Laura Elena. Ph.D. Anthropology, Rice University, May, 2013; *The construction of sustainability in the cement industry: Audit culture, materiality and affective process* (Committee Member)

Chandra, Yenny. Ph.D. Civil Engineering, Rice University, May, 2013; *Simulations of thin curved structures experiencing loss of stability* (Committee Member)

Sun, Chao. Ph.D. Civil Engineering, Rice University, December, 2013; *Structural vibration control of nonlinear systems using the smart tuned mass damper (STMD) and the nonlinear tuned mass damper (NTMD) in parallel* (Committee Member)

Khawwaja, Suman. Ph.D. Mechanical Engineering, Rice University, May 2014; *Hypervelocity impact properties of carbon nanotubes, and advanced-fabric based structural nanocomposites* (Committee Member)

Yang, Yongchao. Ph.D. Civil Engineering, Rice University, December 2014; *Data-driven output-only modal identification and damage detection of structures via blind source separation, sparse and low-rank representation, and compressed sensing* (Committee Member)

Gao, Zhenjia. Ph.D. Civil Engineering, Rice University, December 2014; *Computational framework for the analysis of hybrid masonry systems using an improved non-local technique* (Committee Member)

Zou, Keguan. Ph.D. Civil Engineering, Rice University, December 2014; *Study of adaptive passive stiffness systems with nonlinear vibrations: New analytical and computational techniques* (Committee Member)

Mensah, Akwasi. Ph.D. Civil Engineering, Rice University, Anticipated 2015; *Reliability and Risk assessment of energy systems* (Committee Member)

Yang, Zhou. Ph.D. Civil Engineering, Rice University, Anticipated 2016; *Computational analysis of curved structures exhibiting instabilities* (Committee Member)

### **M.S. Student Committee Service**

Stegemeier, Richard. M.S. Civil Engineering, Rice University, May, 2008; *Mitigating Seismic Risk in Developing Countries: A Case Study on the 2005 Kashmir Earthquake.*(Committee Member)

Kougioumtzoglou, Ioannis. M.S. Civil Engineering, Rice University, May, 2009; *Response and First-Passage statistics of Nonlinear structural models under evolutionary stochastic loads* (Committee Member)

Evangelatos, Georgios. M.S. Civil Engineering, Rice University, May, 2009; *Iterative Determination of Spar Lines Static Equilibrium and Improved Dynamic Modeling by Fractional Derivatives* (Committee Member)

Alejandro Robledo. M.S. Mechanical Engineering, Rice University, May, 2009; *Stochastic Approach to Motorcycle Dynamics* (Committee Member)

Pasala, Dharma Theja Reddy. M.S. Civil Engineering, Rice University, August, 2009; *Repetitive Control of Hysteretic Systems using Robust  $\mathcal{H}_\infty$  Controller* (Committee Member)

Vemuru, Venkata Srivishnu Mohan. M.S. Civil Engineering, Rice University, December, 2009; *Dynamical Response of Multi-Degree of Freedom Structure with Sliding Isolation System and Uplift.* (Committee Member)

Min, Xing. M.S. Civil Engineering, Rice University, Anticipated 2013; *Reliability and topology based design of infrastructure interfaces* (Committee Member)

### **Student Mentoring and Service Activities**

Faculty Advisor, *Rice University Student Chapter, Earthquake Engineering Research Institute (EERI)* (8/2012-present)

Faculty Advisor or Co-Advisor, *Rice University Student Chapter, American Society of Civil Engineers (ASCE)* (8/2007-present)

Faculty Co-Mentor for Select Projects, *Engineers Without Borders Rice Student Chapter*, (2008-2010)

Faculty Associate, *Brown College, Rice University* (5/2008-present).

Faculty Fellow and Mentor, *Rice-Houston Alliance for Graduate Education and the Professoriate (AGEP)* (3/2008-11)



## **Department and School Committee Service**

CEVE Graduate Committee (2007-present)  
CEVE Seminar Committee (2007-present)  
CEVE Awards Committee (2010-2011)  
CEVE ABET Committee (2009)  
Faculty Search Committees (2008-2010)  
Dean's adhoc Committee on Architecture/Engineering Collaboration (2009-2010)

## **Other University Service, Recruitment and Advising Activities**

*ADVANCE* activities (Spearhead luncheon for CEE graduate students and post-docs related to women's pursuit of academic positions; Faculty participant and applicant reviewer *ADVANCE Workshop* on Negotiating the Ideal Faculty Position (NIFP); Organizing committee for 2010 NIFP; participant in EAB and NSF review panels)  
Glasscock School of Continuing Studies (contributed to planning various courses and offering lectures 2009-2011; 2015)  
Rice University Civic Scientist Program (outreach affiliate including K-12 activities host, 2011-present)  
Contributor, Planning the "Norman Hackerman Memorial Symposium: The Corroding of America's Infrastructure", Rice University (2/2008)  
Emerging Scholars Program, (Guest lecturer/host 2012)  
Ongoing Recruiting and Advising at Rice University and Brown School of Engineering  
Rice University "Vision" (Contributor/speaker, ongoing class host)  
Engineering Admit Days (Panelist)  
Major Affair and Engineering Majors Day (annual participant)  
O-week Academic Advising (annual participant)  
Engineering Workshop for NSF Fellowship Applicants (2008)

## **XI. OTHER SYNERGISTIC AND OUTREACH ACTIVITIES**

### **National Science Foundation Outreach to Public and Congressional Members**

Invited Participant and Delegate, Which Hazards are in your Backyard? *A Showcase of NSF-funded Hazards Research*, Capitol Hill, Senate Hart Building, September 7, 2011  
Invited Participant and Delegate, *NSF Hazards Research Expo*, National Science Foundation, September 6, 2011 (with L. Duenas-Osorio)

### **Continuing Studies and Community Outreach**

Glasscock School for Continuing Studies lectures: "Feats of Civil Engineering"; "Present and Future of Critical Infrastructure Systems in Houston, Texas" (with L. Duenas-Osorio); Leonardo da Vinci: Man, Inventor, Genius: Contributions to Engineering (with P. Spanos, S. Nagarajaiah, L. Duenas-Osorio)  
Houston Museum of Natural Sciences Scholars outreach "A Future in Engineering" (4/20)  
STEM Content Advisor, Oregon Museum of Natural Sciences (6/2009-2011)

### **K-12 Outreach on Bridges and Natural Hazards**

STEM Outreach Activities to K-12 students conducted as independent efforts or in collaboration with Rice University SSPEED Center or the Civic Scientist Program. Outreach includes lessons on structural engineering, bridges, natural hazards, along with hands on bridge building activities.

Select examples: Walnut Bend Elementary (2009); SSPEED Explore Engineering Day Camp at Rice University (2011); First Baptist Academy (2013, 2014).

### **Other Professional Outreach**

Guest Lecturer, Houston Chapter of the American Society of Civil Engineers (ASCE), Structural Engineering Association of Texas (SEAOt)

Houston ASCE Chapter's Infrastructure Report Card Committee

Lecturer, AECOM Libya Knowledge Transfer Program (2008-2010)

Consultant, FHWA Pooled Funds Study #TPF-5(155) (2008-2009)

Invited Participant, *NSF Workshop on Bridges of the Future--Widespread Implementation of Innovation*, Las Vegas, NV, June 6-7, 2011.

## **XII. GRANTS AND CONTRACTS**

[1] Title: PIRE-Coastal Flood Risk Reduction Program: Integrated, multi-scale approaches for understanding how to reduce vulnerability to damaging events

Sponsor: National Science Foundation

Rice Sub-Award Amount: \$449,995 (10/01/2015 - 09/30/2020)

Location of Award: Texas A&M Galveston (PI: S. Brody); Total: \$ 3,598,501 .00

Role: PI at Rice University (Co-PI: P. Bedient)

[2] Title: NHERI Cyberinfrastructure 2015-2020

Sponsor: National Science Foundation

Rice Sub-Award Amount: \$159,996 (2015-2020)

Location of Award: University of Texas at Austin (PI: E. Rathje); Total: \$13,700,000

Role: PI at Rice University

[3] Title: NIST Center of Excellence: Center for Risk-Based Community Resilience Planning

Sponsor: National Institute for Standards and Technology

Padgett Sub-Award Amount: \$974,973 (02/01/2015 - 01/31/2020)

Location of Award: Colorado State University (PI: J. van de Lindt); Total: \$20,000,000

Role: PI at Rice University

[4] Title: Risk and Resilience along Houston's Ship Channel: Uncovering Links between Vital Social, Environmental and Physical Systems

Sponsor: Shell Center for Sustainability

Amount: \$112,000 (8/1/2015-8/31/2017)

Location of Award: Rice University

Role: PI

[5] Title: SSPEED Center Funding for Gate Design and Coastal Resiliency

Sponsor: Houston Endowment

Amount: \$3,106,000 (6/01/14-5/31/2016)

Location of Award: Rice University

Role: Co-PI (PI: P. Bedient)

[6] Title: The Stress Nexus of Coastlines: Population Development, Infrastructure Security, and Morphological Dynamics of the Upper Texas Gulf Coast

Sponsor: Shell Center for Sustainability

Amount: \$207,000 (9/1/2013-8/31/2015)

- Location of Award: Rice University  
Role: Co-PI (PI: J. Nittrouer)
- [7] Title: Prioritizing and Selecting Bridge Management Actions for Heightened Truck Loads and Natural Hazards in Light of Funding Allocation Patterns  
Sponsor: National Science Foundation (CMMI-1234690)  
Amount: \$399,996 (9/1/2012-8/31/2016)  
Location of Award: Rice University  
Role: PI (Co-PI: L. Duenas-Osorio)
- [8] Title: Probabilistic Multi-Hazard Assessment of Dry Cask Structures  
Sponsor: Department of Energy, NEUP Program  
Rice Sub-Award Amount: \$ 205,324 (09/24/12 - 09/24/16)  
Location of Award: University of Houston (PI: A. Ayoub)  
Role: PI at Rice University
- [9] Title: CAREER: A Risk-Based Model to Achieve Sustainable Solutions for Bridge Infrastructure Subjected to Multiple Threats  
Sponsor: National Science Foundation  
Amount: \$ 449,821.00 (8/1/2011 – 7/31/2016)  
Location of Award: Rice University  
Role: PI
- [10] Title: SSPEED Center Proposal to the Houston Endowment  
Sponsor: Houston Endowment  
Amount: \$3,200,000 (6/1/2011 – 5/30/2014)  
Location of Award: Rice University  
Role: Co-PI (PI: P. Bedient)
- [11] Title: Lifeline Sustainability: A comprehensive coastal flood warning and evacuation system  
Sponsor: Shell Center for Sustainability  
Amount: \$40,000 (1/1/2011 – 12/31/2011)  
Location of Award: Rice University  
Role: Co-PI (PI: P. Bedient)
- [12] Title: NEESR-CR – Innovative Seismic Retrofits for Resilient Reinforced Concrete Buildings  
Sponsor: National Science Foundation  
Rice Sub-Award Amount: \$184,292 (10/1/2010 – 9/30/2015)  
Location of Award: Georgia Institute of Technology (PI: R. DesRoches)  
Role: PI at Rice University
- [13] Title: MRI-R2: Acquisition of Data Analysis and Visualization Cyber-Infrastructure for Computational Science and Engineering Applications (DAVinCI)  
Sponsor: National Science Foundation  
Amount: \$2,928,889 (5/1/2010-4/30/2013)  
Location of Award: Rice University  
Role: Co-PI (PI: A. Levander)
- [14] Title: Shape Memory Alloy Enhanced SMART Bridge Expansion Joints

- Sponsor: National Academy of Sciences/NCHRP/TRB  
Amount: \$140,000 (2/2010-2/2013)  
Location of Award: Rice University  
Role: PI
- [15] Title: ARRA/NSF: IT-Enabled Continuous Risk Assessment of Bridge Networks for Customized and Actionable Multi-Hazard Interventions  
Sponsor: National Science Foundation (CMMI-0928493)  
Amount: \$380,793 (8/2009-7/2012)  
Location of Award: Rice University  
Role: PI (Co-PI: L. Duenas-Osorio)
- [16] Title: Hurricane Ike: Lessons Learned and Steps for the Future  
Sponsor: Houston Endowment  
Amount: \$1,250,000 (6/30/09-6/29/11)  
Location of Award: Rice University  
Role: Co-PI (PI: Phil Bedient)
- [17] Title: Feasibility Studies for Improving Caltrans Fragility Relationships  
Sponsor: California Department of Transportation (Caltrans)  
Rice Sub-Award Amount: \$36,000 (4/6/2010 – 6/30/2012)  
Location of Award: Georgia Institute of Technology (PI: R. DesRoches)  
Role: PI at Rice University
- [18] Title: Infrastructure Development for Advanced Nanocomposites  
Sponsor: UTC/Air Force Research Lab  
Amount: \$665,907 (3/2009-2/2012)  
Location of Award: Rice University  
Role: Co-PI (PI: R. Barrera)
- [19] Title: Transportation Test Bed  
Sponsor: NSF/Mid America Earthquake Center  
Rice Sub-Award Amount: \$10,000 (8/2007-5/2008)  
Location of Award: Georgia Institute of Technology (PI: R. DesRoches)  
Role: PI at Rice University
- [20] Title: Large Scale Validation of Innovative SMA Recentering Devices for Multi-Span Bridges  
Sponsor: National Science Foundation (NEES-R Payload) (CMMI-0526889)  
Amount: \$70, 987 (8/1/2005 – 8/1/2006)  
Location of Award: Georgia Institute of Technology  
Role: Co-PI at Georgia Tech (PI: R. DesRoches)

### **XIII. SELECT MEDIA COVERAGE**

#### **Outreach Activities**

SSPEED Day Camp: [http://www.youtube.com/watch?v=sYfy\\_SYKVIA](http://www.youtube.com/watch?v=sYfy_SYKVIA)

Bridge Building Activity: [http://engineering.rice.edu/middle\\_school\\_bridges/](http://engineering.rice.edu/middle_school_bridges/)

#### **Research and Professional**

National Engineers Week Foundation: <http://www.eweek.org/site/Engineers/newfaces2009/padgett.shtml>

Building Better Bridges: <http://www.ivanhoe.com/science/story/2011/04/843a.html>  
Houston Bridges: <http://www.bizjournals.com/houston/news/2012/06/06/dozen-galveston-area-bridges.html> and <http://ceve.rice.edu/Content.aspx?id=2147484938>  
NPR's Story on Tank Study: <http://stateimpact.npr.org/texas/2013/10/07/how-hurricanes-that-hit-the-texas-coast-can-float-giant-tanks/>

#### **XIV. CONSULTING ROLES**

2008-2009, Consultant, Federal Highway Administration, Seismic Hazard Mitigation Program, Office of Infrastructure R&D, McLean, VA

2014-Present, Consultant, California Department of Transportation, Division of Research, Innovation & System Information, Sacramento, CA

2014-Present, Consultant, Hill Rivkins LLP, Houston, TX