NIST Engineering Laboratory 100 Bureau Drive, MS 8615 Gaithersburg, MD 20899-8615

Cell: (202) 604-7943 Email: judith.mitrani-reiser@nist.gov

Office: (301) 975-0684

Office: (410) 516-7763

Email: jmitrani@jhu.edu

Web: stirm.johnshopkins.edu

Cell: (202) 552-9271

Web: https://www.nist.gov/topics/disaster-failure-studies

Johns Hopkins University Dept. of Civil Engineering, Latrobe 202 3400 N. Charles St., Baltimore, MD 21218

EDUCATION

Ph.D. | California Institute of Technology (2007) Applied Mechanics

M.S. University of California, Berkeley (2001) Structural Engineering & Mechanics of Materials

B.S. University of Florida (2000) Civil and Coastal Engineering

PROFESSIONAL

National Institute of Standards and Technology, Gaithersburg, MD

Director Disaster and Failure Studies Program (2016 – Present)

Johns Hopkins University, Baltimore, MD

Asst. Prof. Asst. Prof. Asst. Res. Prof. Department of Civil Engineering, Whiting School of Engineering (2010 – Present) Department of Emergency Medicine, JHMI, Joint Appointment (2014 – Present) Department of Civil Engineering (2008 – 2010)

Consultant

Utah Department of Health, Bureau of Emergency Management Services & Preparedness Developed materials for assessing loss of functionality of hospitals damaged by natural hazards; administered short workshop to Health Department employees. (2015)

AECOM (formerly URS Corporation)

Participated in FEMA MAT team post Hurricane Sandy, and consulted on hurricane losses avoided in code-compliant structures. (2012 – 2014)

Applied Technology Council (ATC)

Consulted on downtime estimation for ATC-58, funded by FEMA to develop the "Next-Generation Performance-Based Seismic Design Guidelines." (2007 – 2009)

Associate

Center for Refugee and Disaster Response
Bloomberg School of Public Health, JHU (2015 – Present)

Visiting Prof.

Pontificia Universidad Católica de Chile, Santiago, Chile

Department of Structural and Geotechnical Engineering (Jan 2014, 2015, 2016)

Postdoc

Johns Hopkins University, Baltimore, MD

Department of Civil Engineering with Nicolas P. Jones (2007 – 2008)

Expertise

Earthquake Engineering Community Functioning
Critical Infrastructure Risk Assessment
Disaster Metrology Structural Engineering
Resilience Multi-Hazard

Agent-Based Modeling Health Systems Evacuation Modeling Emergency Preparedness

Honors

George Housner Fellowship, Caltech (2002) Chancellor's Predoctoral Opportunity Fellowship, UC Berkeley (2000) Florida Scholar, UF (1996-2000)

Anderson Scholar, UF (1998)

JOURNAL PUBLICATIONS

Submitted/ Under Revision

Bold font indicates STIRM permanent and visiting research group members.

- (--) **Poulos, A.**, **Tocornal, F.**, de la Llera, J.C., and **Mitrani-Reiser, J.** "Agent-based modeling of an evacuation process in a K-12 school in Iquique, Chile." *Structural Safety* (submitted June 2017).
- (--) Chodur, G., Zhao, X., Biehl, E., **Mitrani-Reiser, J.**, and Neff, R. "Food Security After Disasters: A Systems Modeling Approach," *American Journal of Public Health* (submitted January 2017).
- (--) **Boston, M.** and **Mitrani-Reiser, J.** "Assessing the Impacts of Guidelines for the Design of Nonstructural Components on Hospital Functionality Following an Earthquake," *International Journal of Disaster Risk Reduction* (submitted November 2016).
- (--) **Boston, M.**, Almufti, I., and **Mitrani-Reiser, J.** "Will code-confirming U.S. hospitals be functional after a major earthquake?" *Earthquake Spectra* (in revisions).
- (--) **Mieler, M.W.** and **Mitrani-Reiser, J.,** "Mitigating multi-scale earthquake impacts: A review of the state-of-the-art in assessing loss of functionality in buildings." *Journal of Structural Engineering* (in revisions).

Published/ In Press

- (17) Bruneau, M., Barbata, M., Padgett, J.E., Zaghi, A., **Mitrani-Reiser, J.**, and Li, Y. "State-of-the-Art in Multihazard Design," *ASCE Journal of Structural Engineering* (in press).
- (16)Links, J.M., Schwartz, B.S., Lin, S., Kanarek, N., **Mitrani-Reiser, J.**, Kirk Sell, T., Boddie, C.R., Ward, D., Slemp, C., Burhans, R., Gill, K., Igusa, T., **Zhao, X.**, Aguirre, B., Trainor, J., Nigg, J., Ingelsby, T., Carbone, E., and Kendra, J.M., 2017. "COPEWELL: A Conceptual Framework and System Dynamics Model for Predicting Community Functioning and Resilience after Disasters." American Journal of Public Health. *DOI: 10.1017/dmp.2017.39*
- (15) De la Llera, J. C., Rivera, F., Jünemann, R., **Mitrani-Reiser, J.**, Fortuno, C., Rios, M., Hube, M., Santa Maria, H., and Cienfuegos, R., 2017. "Data Collection after the 2010 Maule earthquake in Chile." *Bulletin of Earthquake Engineering*, 15(2): pp. 555-588. DOI: 10.1007/s10518-016-9918-3
- (14) Zaghi, A.E., Padgett, J.E., Bruneau, M., Barbato, M., Li, Y., **Mitrani-Reiser, J.**, McBride, A., 2016. "Forum Paper: Establishing Common Nomenclature, Characterizing the Problem, and Identifying Future Opportunities in Multi-Hazard Design," *Journal of Structural Engineering*, 142(12): pp. 1-8. DOI: 10.1061/(ASCE)ST.1943-541X.0001586
- (13) **Poulos, A.**, de la Llera, J.S., and **Mitrani-Reiser, J.**, 2016. "Earthquake Risk Assessment of Buildings Accounting for Human Evacuation," *Journal of Earthquake Engineering and Structural Dynamics*, 46(4): pp. 561-583. *DOI: 10.1002/eqe.2803*
- (12) **Mieler, M.W.**, Uma, S.R., and **Mitrani-Reiser, J.**, 2016. "Using Failure Analysis to Establish Seismic Resilience Objectives for Building Components and Systems." *Bulletin of the New Zealand Society of Earthquake Engineering* 49(1).
- (11) **Mitrani-Reiser, J.**, Wu, S., and Beck, J.L., 2016. "Virtual Inspector and its application to immediate pre-event and post-event earthquake loss and safety assessment of buildings." *Natural Hazards*, 81(3): pp. 1861-1878. *DOI: 10.1007/s11069-016-2159-6*
- (10)Liu, Z., Jacques, C.C., Szyniszewski, S., Guest, J.K., Schafer, B.W., Igusa, T., and

- **Mitrani-Reiser, J.**, 2016. "Agent-based simulation of building evacuation after an earthquake: coupling human behavior with structural response." *Natural Hazards Review*, 17(1), February 2016. *DOI: 10.1061/(ASCE)NH.1527-6996.0000199*
- (9) Rutkow, L., **Mitrani-Reiser, J.**, and Barnett, D.J., 2015. "Promoting Comprehensive Disaster Policy Through Interdisciplinary Collaboration." *Injury Prevention. DOI: 10.1136/injuryprev-2015-041855*
- (8) **Pita, G.L.**, Pinelli, J.-P., Gurley, K., and **Mitrani-Reiser, J.**, 2015. "State of the Art of Hurricane Vulnerability Models: A Review." *Natural Hazards Review*, 16(2). *DOI:* 10.1061/(ASCE)NH.1527-6996.0000153
- (7) **Jacques, C.**, McIntosh, J.K., Giovinazzi, S., Kirsch, T.D., Wilson, T.M., and **Mitrani-Reiser, J.**, 2014. "Resilience of the Canterbury Health Care System to the 2011 Christchurch (Mw=6.2) Earthquake, NZ", *Earthquake Spectra*, 30(1): pp. 533-554. *DOI: 10.1193/032013EQS074M*
- (6) **Mitrani-Reiser, J.**, Mahoney, M., Holmes, W.T., de le Llera, J.C., Bissell, R., and Kirsch, T.D., 2012. "A Functional Loss Assessment of a Hospital System in the Biobío Province." *Earthquake Spectra*, 28(S1): pp. S473-S502. *DOI:* 10.1193/1.4000044
- (5) **Pita, G. L.**, Pinelli, J.-P., Gurley, K., Weekes, J., and **Mitrani-Reiser, J.**, 2012. "Assessment of hurricane-induced internal damage to low-rise buildings in the Florida Public Hurricane Loss Model," *Journal of Wind Engineering and Industrial Aerodynamics*, 104-106, pp. 76-87. *DOI: 10.1016/j.jweia.2012.03.023*
- (4) Ramirez, M., Liel, A., **Mitrani-Reiser, J.**, Haselton, C., Spear, A., Steiner, J., Miranda, E., and G.G. Deierlein, 2012. "Seismic Damage and Monetary Loss Performance of Modern Reinforced Concrete Frame Buildings", *Earthquake Engineering and Structural Dynamics*, 14(11): pp. 1455-1475. *DOI: 10.1002/eqe.2216*
- (3) Kirsch, T.D., **Mitrani-Reiser, J.**, Bissell, R., Sauer, L.M., Mahoney, M., Holmes, W.T., Santa Cruz, N., de la Maza, F., 2010. "Impact on Hospital Functions Following the 2010 Chilean Earthquake." *Journal of Disaster Medicine and Public Health Preparedness*, 4(2): pp. 122-128. DOI: 10.1001/dmphp.4.2.122
- (2) Goulet, C., Haselton, C., **Mitrani-Reiser, J.**, Beck, J.L., Deierlein, G., Porter, K.A., Stewart, J.P., and Taciroglu, E., 2007. "Evaluation of the Seismic Performance of a Code-Conforming Reinforced-Concrete Building From Seismic Hazard to Loss Results," *Earthquake Engineering and Structural Dynamics*, 36(13): pp. 1973-1997. *DOI: 10.1002/eqe.694*
- (1) Porter, K, **Mitrani-Reiser, J.** and Beck, J.L., 2006. "Near-Real-Time Loss Estimation for Instrumented Buildings," *The Structural Design of Tall and Special Buildings* 15 (1), 3-20, March 2006. *DOI: 10.1002/tal.340*

REFEREED CONFERENCE PROCEEDINGS

Published

- * denotes author which presented paper at conference; **bold** font indicates STIRM research group member.
- (29) **Mitrani-Reiser, J.**, Mieler, M., Kumar, H., Shrestha, S., Germaraad, M., O'Conor, K., and Kirsch, T.D., 2017. Investigating Community Resilience in Nepal: A Healthcare Focus, *Proc. Of the 16th World Conference on Earthquake Engineering*, Santiago, Chile.
- (28) Zhao, X. and **Mitrani-Reiser, J.**, 2017. Developing a Multi-hazard Weighting Scheme for Community Resilience Indicators, *Proc. Of the 16th World Conference on Earthquake Engineering*, Santiago, Chile.
- (27) Mieler, M. and **Mitrani-Reiser, J.**, 2017. Multi-scale earthquake impacts: A review of the state-of-the-art in modeling loss of functionality in buildings, *Proc. Of the 16th World Conference on Earthquake Engineering*, Santiago, Chile.
- (26) Vasquez, A., Rivera, F., de la Llera, J.C., and **Mitrani-Reiser**, **J.**, 2017. Healthcare network's response and resilience in Iquique after the 2014, Pisagua earthquake, *Proc. Of the 16th World Conference on Earthquake Engineering*, Santiago, Chile.

- (25) Favier, P., Rivera, F., Poulos, A., Vasquez, J., de la Llera, J.C., and **Mitrani-Reiser, J.**, 2017. Impact on Chilean hospitals following the 2015 Illapel Earthquake, *Proc. Of the 16th World Conference on Earthquake Engineering*, Santiago, Chile.
- (24) Poulos, A., Castro, S. de la Llera, J.C., and **Mitrani-Reiser, J.**, 2017. Seismic risk assessment of human evacuation in buildings, *Proc. Of the 16th World Conference on Earthquake Engineering*, Santiago, Chile.
- (23) de la Llera, J.C., **Mitrani-Reiser, J.**, Rovera, F., Fortuno, C., Junemann, R., Poulos, A., and Vasquez, J., 2015. The 2010 Chile Earthquake: a five-year reflection, *Proc., of the 9th Pacific Conference on Earthquake Engineering*, Sydney, Australia.
- (22) Di Sarno, L.*, Manfredi, G., Magliulo, G., Petrone, C., Masi, A., Santarsiero, G., Fabbrocino, G., Rainieri, C., **Mitrani-Reiser, J.**, and Giovinazzi, S., 2015. An Approach to the Seismic Performance Assessment of Medical Components, *Proc., Annual Conference of Italian National Association of Earthquake Engineering*, L'Aquila, Italy, September 2015.
- (21) Masi, A.*, Di Sarno, L., Manfredi, G., Santarsiero, G., Giovinazzi, S., and **Mitrani-Reiser**, J., 2015. Seismic Risk of Italian hospitals: analysis of assessment results to define criteria for intervention prioritization, *Proc.*, *Annual Conference of Italian National Association of Earthquake Engineering*, L'Aquila, Italy, September 2015.
- (20) **Mitrani-Reiser, J.***, **Jacques, C.**, and **Boston, M.**, 2014. Quantifying the Performance of Healthcare Facilities in Disasters: A Multi-hazard Approach, *Proc., 10th National Conference on Earthquake Engineering*, Anchorage, AK, July 2014.
- (19) **Boston, M.***, **Mitrani-Reiser, J.**, **Jacques, C.**, and **Liu, Z.**, 2014. Towards Assessing the Resilience of a Community in Seismic Events Using Agent-Based Modeling, *Proc.*, 10th National Conference on Earthquake Engineering, Anchorage, AK, July 2014.
- (18) **Pita, G.L.*** and **Mitrani-Reiser, J.**, 2013. Modeling Hurricane-Induced Building Downtime, 12th Americas Conference on Wind Engineering, Seattle, WA, July 2013
- (17) Leong, E.N., Liel, A.B.*, **Mitrani-Reiser, J.**, Guglielmo, E., Friis, D., Lumbard, D., Oliveira, R., and Pekelnicky, R., 2013. Gender and Racial Diversity in the Structural Engineering, Proc., *ASCE's Structures Congress*, Pittsburgh, May 2013.
- (16) Jacques, C., Mitrani-Reiser, J.*, and Kirsch, T.D., 2013. An All-Hazards Approach for Quantifying Loss of Function for Critical Healthcare Infrastructure, *Proc., ASCE's Structures Congress*, Pittsburgh, May 2013.
- (15) **Pita, G.L.***, Pinelli, J-P., **Mitrani-Reiser, J.**, Cocke, S., Gurley, K., 2012. Analysis of Hurricane Andrew Insurance Claim Data for Residential Buildings, *Proc., ATC-SEI Advances in Hurricane Engineering*, Miami, FL, October 2012.
- (14) **Mitrani-Reiser, J.***, **Jacques, C.**, Kirsch, T.D., Giovinazzi, S., McIntosh, J.K., and Wilson, T.M., 2012. Response of the Regional Health Care system to the 22nd February 2011, Christchurch Earthquake, NZ, *Proc., 15th World Conference on Earthquake Eng.*, Lisbon, Portugal, Sept. 2012.
- (13) **Liu, Z.**, Jalalpour, M., **Jacques, C.**, Szyniszewski, S., **Mitrani-Reiser, J.***, Guest, J., Igusa, T., & Schafer, B.W., 2012. Interfacing Building Response with Human Behavior Under Seismic Events, *Proc., 15th World Conference on Earthquake Engineering*, Lisbon, Portugal, Sept. 2012.
- (12) **Liu, Z.**, **Jacques, C.***, Jalalpour, M., Szyniszewski, S., **Adelburg, J.**, Guest, J.K., Igusa, T., Schafer, B.W., and **Mitrani-Reiser, J.**, 2012. Seismic Evacuation Model Accounting for Human-Structure Interaction, *Proc.*, 2nd International Conference on Evacuation Modeling and Management, Chicago, IL, August, 2012.
- (11) McIntosh, J.K.*, **Jacques, C., Mitrani-Reiser, J.,** Kirsch, T.D., Giovinazzi, S., and Wilson, T.M., 2012. The Impact of the 22nd February 2011 Earthquake on Christchurch Hospital, *Proc., New Zealand Society for Earthquake Eng. Annual Meeting*, Wellington, New Zealand, May 2012.
- (10) **Pita, G. L.**, Pinelli, J.-P.*, Cocke, S., Gurley, K., Weekes, J., and **Mitrani-Reiser, J.**, 2011. Assessment of hurricane-induced internal damage to low-rise buildings in the

- Florida Public Hurricane Loss Model, *Proc., International Conference of Wind Engineering*, Amsterdam, Netherlands, July 2011.
- (9) **Pita, G. L.**, Francis, R.*, **Liu, Z.**, **Mitrani-Reiser, J.**, Guikema, S. , Pinelli, J.-P., 2011. Statistical tools for populating/predicting input data of risk analysis models, *Proc., International Conference on Vulnerability and Risk Analysis and Management (ICVRAM*), Hyattsville, MD, April 2011.
- (8) **Pita, G. L.**,* Pinelli, J.-P., Gurley, K., Weekes, J., and **Mitrani-Reiser, J.**, 2011. Wind Vulnerability Curves for Low-Rise Commercial-Residential Buildings in the Florida Public Hurricane Loss Model, *Proc., International Conference on Vulnerability and Risk Analysis and Management*, Hyattsville, MD, April 2011.
- (7) Ryan, K.*, Sayani, P., Baez, Y., and **Mitrani-Reiser, J.**, 2009. Comparative Life Cycle Performance Assessment of Conventional and Seismic Isolated Buildings, *Proc., International Symposium on Seismic Response Controlled Buildings for Sustainable Society*, Tokyo, Japan, September 2009.
- (6) **Mitrani-Reiser, J.***, Luco, N., Ryu, H., and Jones, N.P., 2009. Virtual Building Inspection for Open Risk Assessment Software, *Proc., 10th International Conference on Structural Safety and Reliability*, Osaka, Japan, September 2009.
- (5) Luco, N.*, Martinez, E.M., Field, E.H., Ryu, H., and **Mitrani-Reiser, J.**, 2009. An Interactive Web Tool for Quantitative Risk Assessment of Woodframe Houses ("ResRisk"): A Progress Report, *Proc., 10th International Conference on Structural Safety and Reliability*, Osaka, Japan, September 2009.
- (4) Krishnan, S.*, Komatitsch, D., Tromp, J., Muto, M., **Mitrani-Reiser, J.**, and Beck, J.L., 2008. Simulation of an 1857-like Mw 7.9 San Andreas fault earthquake and the response of tall steel moment frame buildings in southern California- A Prototype study, Seismic loss estimation based on end-to-end simulation, *Proc., 14th World Conference on Earthquake Engineering*, Beijing, China, October 2008.
- (3) Goulet, C.,* Haselton, C.,* **Mitrani-Reiser, J.**, Stewart, J.P., Taciroglu, E., and Deierlein, G.G., 2006. Evaluation of the Seismic Performance of a Code-Conforming Reinforced-Concrete Frame Building Part I: Ground Motion Selection and Structural Collapse Simulation, paper NCEE-1576, *Proc., 8th Nat'l Conference on Earthquake Engineering*, San Francisco, CA, April 2006.
- (2) **Mitrani-Reiser, J.**,* Haselton, C., Goulet, C., Porter, K.A., Beck, J.L, and Deierlein, G. 2006. Evaluation of the Seismic Performance of a Code-Conforming Reinforced-Concrete Frame Building Part II: Loss Estimation, paper NCEE-969, *Proc.*, 8th National Conference on Earthquake Engineering, San Francisco, CA, April 2006.
- (1) Porter, K.A.*, **Mitrani-Reiser, J.**, Beck, J.L. and Ching, J.Y., 2006. Smarter Structures: Real-Time Loss Estimation for Instrumented Buildings, paper NCEE-1236, *Proc., 8th National Conference on Earthquake Engineering* San Francisco, CA, April 2006.

OTHER PUBLICATIONS

Reports

- * denotes author which presented paper at conference; **bold** font indicates STIRM research group member.
- (6) **Mitrani-Reiser, J., Jacques, C.**, Kirsch, T., Comerio, M., Holmes, B., Mahin, S. Giovinazzi, S., McIntosh, J., and Wilson, T., 2013. "A Comparative Study on the Seismic Preparedness of Hospitals Following Recent Damaging Events." *California Seismic Safety Commission (CSSC) Technical Report.*
- (5) Giovinazzi, S., **Mitrani-Reiser, J.**, Kirsch, T., Wilson, T.M., **Jacques, C.**, McIntosh, J.K., and Johnston, D., 2011. Assessing the Post-Earthquake Functionality of the Health System Following the Canterbury Earthquakes in NZ. Hospital Functions and Services, NHRP.
- (4) Mitrani-Reiser, J., and Jones, N.P., 2010. "A Decision Support Tool for Open Risk

- Assessment Software: Collaborative Research with Johns Hopkins University," *USGS Technical Report 2010 for Award No 08HQGR001*. Reston, Virginia.
- (3) Haselton, C., Goulet, C., **Mitrani-Reiser, J.**, Beck, J.L., Deierlein, G., Porter, K.A., Stewart, J.P., and Taciroglu, E., 2008. "Benchmarking of the Seismic Performance of a Code-Conforming Reinforced-Concrete Building," *PEER Technical Report 2007/12*. Berkeley, California.
- (2) Porter, K.A., J.L. Beck, J.Y. Ching, and **Mitrani-Reiser**, J., 2004. "Real-Time Loss Estimation for Instrumented Buildings," *Earthquake Engineering Research Laboratory Report*, California Institute of Technology, Pasadena, CA.
- (1) Mitrani, J., Goethals, J. and Glaser, S. 2002. "Field Testing of Wireless Interactive Sensor Nodes," *Port and Airport Research Institute Technical Report*, Yokosuka, Japan.

Special Earthquake Reports

- (2) Comerio, M., et al., 2011. "Learning from Earthquakes: The M 6.3 Christchurch, New Zealand, Earthquake of February 22, 2011," EERI Newsletter Insert, May 2011 (16 pp).
- (1) Moehle, J., et al., 2010. "Learning from Earthquakes: The Mw 8.8 Chile Earthquake of February 27, 2010," EERI Newsletter Insert, June 2010 (20 pp).

Practice Oriented

- (2) FEMA (contributing author: J. Mitrani-Reiser), 2013. P-942: Superstorm Sandy: Observations, Conclusions, and Recommendations, Technical Report Prepared for the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency, Washington, DC.
- (1) FEMA (contributing author: J. Mitrani-Reiser), 2012. *P-58: Seismic Performance Assessment of Buildings*, Technical Report Prepared for the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency, Washington, DC.

CONFERENCE PRESENTATIONS/EXTENDED ABSTRACTS

- * denotes author which presented at conference; **bold** font indicates STIRM research group member.
- (13) **Mitrani-Reiser, J.***, Links, J.*, Slemp, C.*, and Carbonne, E.*, 2016. "CoPE-WELL: A Decision Support Tool for Predicting and Enhancing Community Functioning and Resilience Post-Disaster," Preparedness Summit, Dallas, TX, April 2016.
- (12) **Mitrani-Reiser, J.***, 2015. "The Nepal Earthquake: Dispatches from the Field," Natural Hazards Workshop, Boulder, CO, July 2015.
- (11) **Mitrani-Reiser, J.***, 2015. "Organizational and Institutional Resilience," Natural Hazards Workshop, Boulder, CO, July 2015.
- (10) **Jacques, C.***, Giovinazzi, S., Kirsch, T.D., and **Mitrani-Reiser, J**. Characterization of the Canterbury, New Zealand Healthcare System for Use in Seismic Simulation. Poster session. Presented at the EERI 2015 Annual Meeting; 2015 March 29 April 3; Boston, MA, USA.
- (9) **Jacques, C.C.***, Giovinazzi, S., and **Mitrani-Reiser, J.**, 2014. "Quantifying the Resilience of Healthcare Systems in Earthquakes: a Practical Approach," *Proc., 3rd International Conference on Urban Disaster Reduction*, Boulder, CO, Oct 2014.
- (8) **Mitrani-Reiser, J.***, 2014. "Quantifying Societal Impacts of Natural Disasters," Systems Institute Workshop, Johns Hopkins University, Baltimore, MD, Oct 2014.
- (9) De la Llera, J. C.*, Rivera F., Jünemann R., **Mitrani-Reiser**, **J.***, Fortuño C., Hube M., Santa María H., Ríos, M., Lagos R., Guendelman T., Candia G., Ledezma C., Hube M., Cienfuegos R., Lindenberg, J., 2014. "Post Earthquake Data Collection: the 2010 Maule Earthquake," *Post Earthquake Data Workshop*, Anchorage, AK, July 2014.
- (8) **Mitrani-Reiser, J.***, 2013. "East Coast Earthquakes, Damage to Critical Building Systems, and Performance-Based Design," *National Society of Professional*

- Engineers Meeting, Washington, DC, Dec 2013.
- (7) **Jacques, C.*** and **Mitrani-Reiser, J.,** 2013. "Quantifying Resilience of Healthcare Facilities," Emergency *Public Health and Disasters Conference*, Torrence, CA, May 2013.
- (6) Jacques, C.*, Liu, Z., Szyniszewski, S., Schafer, B., and Mitrani-Reiser, J. "Modeling Post-Earthquake Evacuation of Damaged Structures: an Agent-Based Approach" Poster Session. Presented at the EERI 2013 Annual Meeting; 2013 February 12-15; Seattle, WA, USA.
- (5) **Mitrani-Reiser, J.***, 2013. "Applying Models of Human Behavior and Memory in Disasters Across Space and Time," *National Council for Science and the Environment (NCSE)*, Disasters & the Environment, Washington, DC, Jan 2013.
- (4) **Jacques, C.***, **Adelburg, J.**, & **Mitrani-Reiser, J.** "Earthquake Outreach: Design of an Educational Module for High School Students on Seismic Design in a Healthcare Context." Poster session. Presented at the EERI 2012 Annual Meeting and National Earthquake Conference; 2012 April 10-13; Memphis, TN, USA.
- (3) **Mitrani-Reiser, J.***, 2012. "Quantifying Loss of Function of Critical Building Systems due to Recent Seismic Events," *EERI Annual Meeting*, Memphis, TN, April 2012.
- (2) Mitrani-Reiser, J.* and Beck, J.L., 2007. Incorporating Losses Due to Repair Costs, Downtime and Fatalities in Probabilistic-Based Earthquake Engineering, Proc., Computational Methods in Structural Dynamics and Earthquake Engineering, Crete, Greece, June 2007.
- (1) **Mitrani-Reiser, J.***, 2007. "Modeling Decision Variables: Dollars, Deaths, and Downtime," *PEER Annual Meeting*, San Francisco, CA, Jan 2007. (plenary talk)

Invited Presentations

Invited Seminars

- (36) 10th ASNEngr Annual Conference, Manassas, VA, June 2017. Keynote Lecture: "Building Resilience in Nepal's Healthcare System."
- (35) Center for Risk-Based Community Resilience Planning Semiannual Meeting, Ft. Collins, CO, April 2017. Webinar: "Community Resilience: Modeling, Field Studies and Implementation."
- (34) EERI Annual Meeting, Portland, Oregon, March 2017. "It's Not Just About Buildings: Earthquakes and People."
- (33) Caltech Symposium on Making Rational Decisions Under Uncertainty and Model Complexity, Pasadena, CA, March 2017: "Performance-Based Engineering: A Framework for Assessing Critical Community Functions after Disasters"
- (32) EERI Learning from Earthquakes Travel Study Program, Santiago, Chile, January 2017. "Healthcare Recovery and Strategies in Chile, New Zealand, and Nepal."
- (31) Center of Excellence on Community Resilience Semiannual Meeting, Gaithersburg, MD, November 2016. "Disaster and Failure Studies at NIST."
- (30) International Workshop on Modeling of Physical, Economic, and Social Systems for Resilience Assessment, Washington, DC, October 2016. "Natural Disaster Impacts on Infrastructure Systems and Society."
- (29) Natural Hazards Workshop, Boulder, CO, July 2016. Panelist speaking on "Predicting Community Functioning and Resilience after Disasters: Composite of Post-Event Well-Being (CoPE-WELL)"
- (28) Utah Earthquake Resiliency Workshop, West Jordan, UT, April 2016. "State Healthcare Resiliency Efforts: What Can We Learn?"
- (27) National Institute of Standards and Technology (NIST), Engineering Lab, April 2016. "Natural Disaster Impacts on Infrastructure Systems and Society."
- (26) University of Maryland, College Park, MD, March 2016. "Natural Disaster Impacts on Infrastructure Systems and Society."
- (25) University of California, Berkeley, CA, PEER Annual Meeting, Jan 2016. "Modeling

- Community Functioning Following Earthquakes."
- (24) University of California, Berkeley, CA, SEMM Seminar, Nov 2015. "Assessment of Critical Community Functions after Disasters."
- (23) Structural Engineers Association of Utah/EERI-Utah Chapter Joint Lecture, Salt Lake City, UT, Oct 2015. "Assessment of Critical Community Functions after Disasters."
- (22) University of Connecticut, Storrs, CT, Sept 2015. "Risk Assessment of Critical Community Functions after Disasters."
- (21) National Institute of Building Sciences, Multihazard Mitigation Council Monthly Webinar, Sept 2015. "Disasters and Infrastructure"
- (20) University of Pittsburg Medical Center, Baltimore, MD, Sept 2015. "Natural Disaster Impacts on Infrastructure Systems and Society."
- (19) University of California, Berkeley, CA, PEER Earthquake Debrief, Aug 2015. "Healthcare Facilities."
- (18) Utah Hospital Association, Salt Lake City, UT, May 2015. "Assessment of Healthcare Functions after Disasters."
- (17) University of Virginia, Dept. of Civil & Environmental Engineering, April 2015. "Risk Assessment of Critical Community Functions after Disasters."
- (16) University of Florida, Dept. of Civil & Environmental Engineering, March 2015. "Risk Assessment of Critical Community Functions after Disasters."
- (15) Utah State Health Department, March 2015. "Assessment of Healthcare Functions after Disasters."
- (14) University of Delaware, Disaster Research Center Seminar, Nov 2014. "Risk Assessment of Critical Community Functions after Disasters."
- (13) Rutgers University, School of Planning and Public Policy, Oct 2014. "Research Collaboration Network on Sustainable Cities: Buildings as Critical Health Infrastructure."
- (12) Virginia Tech, Dept. of Civil & Environmental Engineering, Sept 2014. "Assessment of Critical Community Functions after Disasters."
- (11) Pontificia Universidad Católica de Chile, Dept. of Structural & Geotechnical Engineering, Jan 2014. "Disaster Studies in the STIRM Lab."
- (10) Johns Hopkins University, Dept. of Environmental Health Sciences (BSPH), Dec 2013. "East Coast Earthquakes: Preparing for the Unexpected."
- (9) Pontificia Universidad Católica de Chile, Dept. of Structural & Geotechnical Engineering, Jan 2013. "Estimating Loss of Function of Critical Building Systems."
- (8) University of Puerto Rico, Mayaguez, Dept. of Civil Engineering, Nov. 2012 (2012). "Estimating Loss of Function of Critical Building Systems."
- (7) Carnegie Mellon University, Dept. of Civil Engineering, May 2012. "A Performance Assessment of Critical Building Systems After Recent Seismic Events."
- (6) Tulane University, Tulane Engineering Forum, March 2012. "Quantifying Loss of Function of Critical Building Systems due to Recent Seismic Events."
- (5) Johns Hopkins University, Johns Hopkins Medicine International, June 2010. "The Impact of the 2010 Chilean Earthquake on Hospital Functions."
- (4) National Institute of Standards and Technology (NIST), National Hazards Earthquake Reduction Program, April 2009. "Tools for Performance Design and Multi-Hazard Applications."
- (3) Rensselaer Polytechnic Institute (RPI), Dept. of Civil Engineering, Nov 2008. "Tools for Performance Design and Multi-Hazard Applications."
- (2) Johns Hopkins University, Dept. of Civil Engineering, April 2008. "New Structural Performance Metrics and Applications in Earthquake and Wind Engineering."
- (1) Caltech, Dept. of Civil Engineering, Feb 2008. "An Ounce of Prevention: Probabilistic Loss Estimation for Performance-Based Earthquake Engineering."

RESEARCH

Funding | Active Projects:

Natural Hazards Engineering Research Infrastructure: Computational Modeling and Simulation Center

> National Science Foundation, Oct 2016 - Sept 2021, \$4,200,000 PI: Mahin (UC Berkeley); Senior Personnel: Mitrani-Reiser (JHU-WSE)

RIPS: Quantifying Disaster Resilience of Critical Infrastructure-Based Societal Systems with Emergent Behavior and Dynamic Interdependencies National Science Foundation, Sept 2014 – Aug 2017, \$2,500,000

PIs: Mitrani-Reiser (JHU-WSE), Miller-Hooks (UMD); co-PIs: Green (JHU-WSE), Nigg (Delaware), Fisher-Liu (UMD)

Public Health Systems Preparedness and Emergency Response Research Center (PERRC): Harmonization Project

> Center for Diseases Control and Prevention, Sept 2014 – Sept 2016 PI: Links (JHU-BSPH); Senior Personnel: Mitrani-Reiser (JHU-WSE)

National Research Center for Integrated Natural Disaster Management FONDAP Center of Excellence in Chile, Sept 2014 - Sept 2017 PI: Cifuentes, Pontificia Universidad Católica de Chile; International Collaborator: Mitrani-Reiser (JHU-WSE)

Completed Projects:

Feeding the City in an Uncertain World: Creating Resilient Urban Food Systems in Baltimore and Beyond

IHU's 21st Century Cities Initiative, Sept 2015 - Aug 2016, \$39,961 PI: Neff (JHU-BSPH); co-PI: Mitrani-Reiser (JHU-WSE), Barnett (JHU-BSPH)

Multi-criteria disaster vulnerability assessment: critical infrastructure, human behavior, and public policy

> National Science Foundation, Sept 2012 - Aug 2015, \$380,001 PI: Mitrani-Reiser (JHU-WSE); co-PIs: Barnett (JHU-BSPH), Rutkow (JHU-BSPH)

Towards a Community Resilience Index

Center for Diseases Control and Prevention, Sept 2012 – Sept 2015, \$300,000 PI: Links, JHU-BSPH; Senior Personnel: Mitrani-Reiser (JHU-WSE)

Multi-Hazard Scenario Development for Modeling Post-Disaster Behavior of Physical and Human Infrastructures

> National Institutes of Health (NIH), Jan 2013 - Jun 2013, \$149,996 PI: Epstein (JHU-JHMI); Subaward PI: Mitrani-Reiser (JHU-WSE)

Survey and Evaluation of Recent Hospital Evacuations Following Damaging Earthquakes in California, Mexico, and New Zealand

California Seismic Safety Commission, Aug 2011 - Mar 2013, \$38,919 PI: Mitrani-Reiser (JHU-WSE); co-PI: Kirsch (JHU-JHMI)

- Interfacing Building Models under Earthquake Loading with Human Behavior Center for Diseases Control and Prevention, June 2011 - Sept 2011, \$148,600 PI: Epstein (JHU-JHMI); Subaward PI: Mitrani-Reiser (JHU-WSE)
- NEESR-SG: TIPS Tools to Facilitate Widespread Use of Isolation and Protective Systems, a NEES/E-Defense Collaboration

Center for Diseases Control and Prevention, Sept 2014 - Sept 2015, \$ PI: Ryan (Utah State University); Subaward PI: Mitrani-Reiser (JHU-WSE)

Modeling Building Downtime due to Hurricane Impacts

National Science Foundation, Jul 2008 - June 2011, \$299,999

PI: Mitrani-Reiser (JHU_WSE); coPIs: Jones (JHU-WSE); Guikema (JHU-WSE)

 A Decision Support Tool for Open Seismic Risk Assessment Software: Collaborative Research with Johns Hopkins University and USGS

U.S. Geological Survey, Dec 2007 – Nov 2008, \$62,159 PI: Jones (JHU-WSE); **co-PI: Mitrani-Reiser (JHU-WSE)**

TEACHING

Undergraduate Courses

Johns Hopkins University (2010 - Present)

560.220 Civil Analysis, Fall 2010, '11, '12, '13, '14, '15

Graduate Courses

Johns Hopkins University (2010 – Present)

560.630 Structural Dynamics, Fall 2014, Spring 2015, '16

560.692 Graduate Seminar in Civil Engineering, Fall 2010, Spring 2011

560.752 Structural Dynamics, Spring 2011, '12, Fall 2012

560.766 Multi-Hazard Risk Mitigation, Fall 2014

Guest Lecturer

Johns Hopkins University (2012 – Present)

305.861 Graduate Seminar in Injury Research and Policy, Spring 2015

800.644 Topics in Interdisciplinary Medicine, Spring 2015, '16

180.670 Intro to Public Health Emergency Preparedness, Spring 2012, '16

Development

National Effective Teaching Institute (NETI)

3-Day Workshop in Vancouver, Canada, June 2011

Directors: Rebecca Brent, Richard Felder, Michael Prince

Outreach

Johns Hopkins University:

- Summer Teaching Institute, JHU (May 2016) Lecturer and Panelist: Course Planning
- Preparing Future Faculty Teaching Academy, JHU (Spring 2016)
 Faculty Mentor of PFFTA Fellow, Guanbo Bian
- Teaching Topics and Tapas, JHU (January 2016) Lecturer: Designing Active Learning Exercises
- Preparing Future Faculty, University of Nebraska-Lincoln (2015 2016)
 Faculty Mentor of PFF Fellow, Andrea Arguelles
- Summer Teaching Institute, JHU (May 2014) Lecturer and Panelist: Course Planning
- WSE Education Innovation Seminar, Baltimore, MD (Dec 2011) Lecturer: Contextualizing introductory computation

Pre-K - 12:

- JHU's STEM Achievement in Baltimore Elementary Schools (2014 2015) Faculty Mentor, John Ruhrah Elementary School
- Bryn Mawr STEM Summer Internship (June 2014 Sept 2014) Faculty Mentor
- Beth Tfiloh Dahan Community Day School (March 2013) Lecturer: The waves under our feet
- STEM Internships Convocation, Bryn Mawr School, Baltimore, MD (Nov 2013) Lecturer: Quantifying Societal Impacts & Functional Loss of Building Systems
- Yo! Baltimore Tutoring Project, JHU, Baltimore, MD (May 2013) Lecturer: Estimating Loss of Function of Critical Building Systems
- Engineering Innovation Summer Program, JHU, Baltimore, MD (2011; 2012) Lab Director: Engineering Economical and Earthquake-Safe Hospitals
- Caltech/LEGO Middle School Robotics Conference (2004)

Volunteer

Service

Johns Hopkins University

- (SABES) STEM Achievement in Balt. Elementary Schools (2012 Present) Faculty Advisory Board Member
- (PFFTA) Preparing Future Faculty Teaching Academy (2014 2015) Faculty Advisory Board Member
- (GSI) Gateway Sciences Initiative: The Active Learning eStudio Project (2012) Faculty Participant in Design and Use of eStudio

MENTORSHIP

Postdoc Advisor

Postdoc | Post-doctoral Scholars

- Mike Mieler (2014 2016)
- Gonzalo Pita (2012 2014)

PhD

Graduate Students. PhD

- Fardad Haghpana, PhD Candidate, co-advisor
- Xilei Zhao, PhD Candidate, graduated May 2017
- Megan Boston, PhD Candidate, graduated April 2017
- Caitlin Jacques, PhD Candidate, graduated May 2016

MS

Graduate Students, MSE (Coursework only):

- Zhang Liu (2015)
- Xinyi Lin (2013)
- Claire Li (2011)

Visiting Scholars

Visiting Graduate Students:

- Felipe Tocornal, MS Candidate at Universidad Católica de Chile (2014)
- Alan Polous, MS Candidate at Universidad Católica de Chile (2014)
- Gonzalo Pita, PhD Candidate at Florida Inst. of Technology (2009)

Undergraduate Researchers

Undergraduate Student Researchers:

- Stephen Wong, JHU (B.S. 2015)
- Kara Mahoney, George Mason University (B.S. 2014)
- Linnea Cripe (B.S. 2014)
- Amory Martin (B.S. 2014)
- Jason Adelstein, Princeton University (B.S. 2014)
- Majid, Jaidi, JHU (B.S. 2013)
- Meagan Young (B.S. 2012)
- Erin Kelly (B.S. 2012)
- Peter Wildfeuer (B.S. 2011)

Outreach

Johns Hopkins University:

- Homewood Postdoctoral Retreat (April 2015)
 - Panelist: Academic Careers
- Homewood Postdoctoral Association (Dec 2014)
 Moderator: Careers at Primarily Undergraduate Institutions
- Annual Hopkins Postdoc Retreat (May 2014) Panelist: *Specific Aims 101*
- Professional Development Day for Grad. Students and Postdocs (Dec 2011) Presentation: *Academic Career Tracks: Science and Engineering*
- Professional Development Workshop (May 2011)
 Presentation: Application and Interviewing in the Sciences and Engineering
- Johns Hopkins Workshop on NSF Grant Writing (April 2010)

Presentation: Writing a successful NSF proposal

Service Johns Hopkins University

- (SHPE) Society of Hispanic Professional Engineers (2010 2016) Faculty Advisor
- (HWPDA) Homewood Post-doctoral Association (2007 2010) Founder and Faculty Advisor

PROFESSIONAL SERVICE

Fieldwork

Disaster | NIST Disaster and Failure Studies Program

Hurricane Matthew Flooding, North Carolina (November 2016)

EERI Learning from Earthquakes (LFE) Program

Gorkha Earthquake, Nepal (Hospital Team Lead, June 2015)

Christchurch Earthquake, New Zealand (Hospital Team Lead, March 2011)

Maule Earthquake, Chile (Hospital Team Lead, March 2010)

FEMA Mitigation Assessment Team

Hurricane Sandy (Hospital Team Lead, December 2012)

California Seismic Safety Commission Team

Baja California Earthquake (March 2011)

Technical Committees

American Society of Civil Engineers – Structural Engineering Institute (ASCE-SEI)

Multi-Hazard Risk Mitigation Committee, Vice Chair (2010 – Present)

Disaster Resilience Committee, Member (2012 - Present)

Earthquake Engineering Research Institute (EERI)

Learning from Earthquakes Committee, Member (2012 - Present)

Federal Emergency Management Agency

P-942: Mitigation Ass. Report: Hurricane Sandy, Main Comm. Member (2012 - 2013)

P-58: Seismic Performance Assess. of Buildings, Main Comm. Member (2007 – 2009)

Professional **Committees**

Earthquake Engineering Research Institute (EERI)

Nominated for Board of Directors (May 2017)

Initiatives Development Committee (2015 - Present)

Publications Committee (2011 - Present)

National Capital Chapter, Vice President (2011 - 2014)

Public Policy Committee, Member (2010 - 2014)

American Society of Civil Engineers – Structural Engineering Institute

Multihazard Risk Mitigation Committee, Vice Chair (2011 - Present)

SEI Young Professionals Committee, Member (2011 - 2014)

Editor

Associate | American Society of Civil Engineers

Natural Hazards Review (2010 - 2016)

Proposal Panels

National Science Foundation

Hazard SEES (2015); CAREER (2013); CMMI (2012), CAREER (2010); IMEE (2009)

U.S. Geological Survey

Earthquake Effects (2012; 2008; 2007)

National Academies of Science/USAID

Partnerships for Enhanced Engagement in Research (PEER) Science (2014)

Meeting & Workshop Organization

National Conference on Earthquake Engineering, Los Angeles, CA

Chair of Socioeconomic & Public Policy Technical Program, Member (2017 – 2018)

Caltech Symposium on Making Rational Decisions Under Uncertainty and Model

Complexity, Pasadena, CA Chair (2016 – 2017)

National Conference on Earthquake Engineering, Anchorage, AK

Proceedings Committee, Co-Chair (2012 – 2014) Technical Committee, Member (2013 – 2014)

EERI Annual Meeting & National Earthquake Conference, New Orleans, LA Organizing Committee (2011)

Workshop on Vulnerable Pop., Comm. Resilience & Health System Impact, Baltimore, MD Workshop Chair (2012)

Chile Earthquake Research Needs Workshop, NSF, Arlington, VA Organizing Committee (2010)

Journal Reviewer

Earthquake Spectra Journal of Env. Research and Public

Earthquake Eng. & Structural Dynamics Health

Natural Hazards Review Structures and Buildings Journal of Structural Engineering Computers and Geosciences

Risk Analysis Georisk

Professional Associations

(ASCE) American Society of Civil Engineers, Member (1998 – Present)

(EERI) *Earthquake Engineering Research Institute*, Member (2001 – Present)

(SRA) Society for Risk Analysis, Member (2009 - 2014)

(WADEM) World Assoc. for Disaster and Emergency Medicine, Member (2012 – Present)

(SSA) Seismological Society of America, Member (2013 – Present)

INTERNAL (JOHNS HOPKINS UNIVERSITY) SERVICE

Undergraduate Academic Advisor

Undergraduate | Major Civil Engineering Class of 2015 (2011 – 2015)

Advisor for the 9 students in the 2015 class.

Minor Civil Engineering Class of 2015 (2011 - 2015)

Advisor for the 2 students in the 2015 class.

General Engineering Students: 2012 (3)

Service Activities

Johns Hopkins University

- (SSEI) Student Services Excellence Initiative, Provost Office (2016) Steering Committee Member
- (E2SHI) Environment, Energy, Sustainability, and Health Inst. (2015 2016) Executive Committee Member
- WSE National Advisory Council Meeting (2014) Faculty Panelist
- Geospatial Sciences Teaching and Research Focus Group (2010 2014) Faculty Member
- Johns Hopkins University Admissions Open House (2013)

 Presentation: Learning from Katrina and Superstorm Sandy: Building Resilience
- Johns Hopkins University Family Weekend (2012)

 Presentation: Earthquake Engineering and Public Health Emergency Preparedness
- Homewood Associates Luncheon (2012) Faculty Participant
- Faculty-Student Interaction Programs (2011; 2012; 2013) Faculty Participant

• Search Committee for Assistant Dean for Engineering Education Outreach (2010) Search Committee Member

Department of Civil Engineering

Water Institute

- Faculty Search Committees General Search (2016); MoM Search (2015); Structures Search (2013); SI Search (2012)
- Committee of Graduate Admissions Chair (2015 - Present)
- Committee of Student Recruitment Chair (2010 2013), Member (2010 2015)
- Committee of Undergraduate Education Member (2010 – 2015)

Institutes & Centers

Center for Refugees and Disaster Response (CRDR) Environment, Energy, Sustainability, and Health Institute (E²SHI) Systems Institute (SI)