

CURRICULUM VITAE

NEGAR ELHAMI-KHORASANI

Department of Civil, Structural and Environmental Engineering
University at Buffalo, State University of New York
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RESEARCH INTERESTS

My primary areas of research include (a) fire engineering and structure-fire interaction, (b) performance- based design and reliability analysis of structures at high temperatures, (c) resiliency of communities under extreme hazards including wildfires and earthquakes, and (d) cascading multi-hazard analysis (such as post- earthquake fires) and their effects on structures and communities. The primary goal of my research group is to measure and improve resilience of structures (buildings, tunnels, and bridges) and communities to extreme events and cascading multi-hazard scenarios by developing holistic frameworks for risk assessment and next generation code and design guidelines.

EDUCATION

- Ph.D. Civil Engineering – Structural Engineering 2010-2015
Princeton University, Princeton, NJ, USA
Thesis: A Probabilistic Framework for Multi-Hazard Evaluations of Buildings and Communities Subject to Fire and Earthquake Scenarios
Supervisor: Maria Garlock
- M.A.Sc. Civil Engineering – Structural Engineering 2008-2010
University of Toronto, Toronto, ON, Canada
Thesis: System-level Structural Reliability of Bridges
Supervisor: Paul Gauvreau
- B.A.Sc. Civil Engineering (Honors) 2004-2008
University of Toronto, Toronto, ON, Canada
Thesis: Structural Reliability and Robustness in Probabilistic Design
Supervisor: Paul Gauvreau

APPOINTMENTS

Assistant Professor, University at Buffalo, Department of Civil, Structural and Environmental Engineering, January 2016 – present.

Postdoctoral Research Associate, Princeton University, Department of Civil and Environmental Engineering, July 2015 – December 2015: developed fragility curves for steel buildings under fire; worked with Hazus & Ergo programs to study community resiliency under post-earthquake fires;

Research Assistant, Princeton University, Department of Civil and Environmental Engineering, September 2010 – June 2015: developed a probabilistic assessment of parametric temperature-time curves for office building fires; modified the source code of the OpenSees software for fire and fire following earthquake analyses of steel structures; performed risk analysis of steel office buildings under fire and fire following earthquake.

Research Assistant, University of Toronto, Department of Civil Engineering, Sept. 2008 - Aug. 2010: developed a working definition and mathematical characterization for reliability of a bridge system; evaluated safety index of a conventional bridge system (three span twin girder steel bridge); evaluated safety index of a new bridge system (double-T high performance concrete bridge).

National Scholarship Research Student (NSERC-USRA), University of Toronto, Department of Civil Engineering, May 2008 - August 2008: prepared an annotated bibliography of available literature on robust structural systems.

Summer Intern (Engineer), TWD Roads - Carillion Canada, Toronto, Canada, June 2007 – August 2007: conducted weather analysis for material estimation; performed project evaluation and review of the progress with respect to tender values; researched Anti-Icing and Road Weather Information System (RWIS) technologies; created Hwy maintenance work schedule with Microsoft Project; created/updated labor/material reconciliation spread sheets.

Senior Structure Drafter, Ministry of Transportation Ontario (MTO), Toronto, Canada, May 2006 – August 2006: prepared bridge inspection Request for Proposal (RFP) documents; arranged location maps; bridge inspection data sheets and drawings; inspected bridges in Central Region, Ontario; created and updated Ontario Bridge Management System (OBMS) files.

Summer Intern (Engineer), Delcan Corporation, Toronto, Canada, May 2005 – August 2005: inspected bridges to identify erosion problems; obstructions to water flow and other general defects; prepared report of bridge inspection to be submitted to the City of Toronto; performed quantity estimating; moving coordinator of the structural department.

HONORS, AWARDS, AND RECOGNITIONS

University at Buffalo

Structural Engineering Institute (SEI) Young Professional Scholarship, April 2019

Qualified for Buffalo Blue Sky Silver Coin, August 2018

ASCE ExCEED Fellow, July 2016

Princeton University

Nominated by the Dept. of Civil and Env'l Eng. for the Graduate School Teaching Award, Spring 2013

Recipient of the Sherrerd Foundation Fellowship in the Dept. of Civil and Env'l Engineering, Fall 2013

Recipient of the Norman J. Sollenberger Fund, January 2012

Gordon Wu Fellow – Princeton University, Sept. 2010 - 2015

NSERC Post Graduate Scholarship (PGSD2), Sept. 2010 - Sept. 2012

University of Toronto

NSERC Post Graduate Scholarship (PGSM), Sept. 2008 - Sept. 2010

Beatty Fellowship Award, 2008 - Sept. 2009

Faculty of Applied Science and Engineering R.A. Downing Scholarship in Civil Engineering, Sept. 2007

Yolles-Bergmann Scholarship for 3rd year (Steel and Concrete) Structural Design Projects, Aug. 2007

Greater Toronto Sewer and Watermain Contractors Association Award in Civil Engineering, Aug. 2007

Nominated for Halsall Scholarship in Building Engineering, July 2007

Faculty of Applied Science and Engineering R.A. Downing Scholarship in Civil Engineering, Aug. 2006

Faculty of Applied Science and Engineering UMA Scholarship in Civil Engineering, Aug. 2006

Faculty of Applied Science and Engineering James Franceschini Foundation Scholarship, Aug. 2005

Rank 2 of the civil engineering class at University of Toronto for seven semesters, 2004-2008

University of Toronto Admission Scholarship, Aug. 2004

Successfully attended Mathematics and Computer Olympiads and moved to national level in high school, 2002

JOURNAL PUBLICATIONS (14 published)

Underlined: student at UB

Google Scholar citations as of July 2019: 206 (<https://scholar.google.com/citations?user=2zvRsWMAAAAJ&hl=en>)

- [14] Qureshi, R., Elhami Khorasani, N., Gernay, T. (2019). "Examining the need for active boundary conditions in structural fire testing." *Journal of Structural Fire Engineering*, in press. (Impact factor: 0.74)
- [13] Elhami Khorasani, N., Gernay T., Fang, C. (2019). "Parametric study for performance-based fire design of US prototype composite floor systems." *ASCE Journal of Structural Engineering*, 145(5). (Impact factor: 2.021)
- [12] Sarreshtehdari, A., Elhami Khorasani, N., Coar, M. (2019). "A stream-lined approach for evaluating post-earthquake performance of electric networks." *Sustainable and Resilient Infrastructure*. <https://doi.org/10.1080/23789689.2018.1542211>.
- [11] Gernay, T., Van Coile, R., Elhami Khorasani, N., Hopkin, D. (2019). "Efficient uncertainty quantification method applied to structural fire engineering computations." *Engineering Structures*, 183:1-17. (Impact factor: 2.755).
- [10] Coar, M., Garlock, M.E.M., Elhami Khorasani, N. (2019). "Effects of water network dependency on the electric network for post-earthquake fire suppression." *Sustainable and Resilient Infrastructure*. <https://doi.org/10.1080/23789689.2018.1563408>
- [9] Gernay, T., Elhami Khorasani, N., Garlock, M.E.M. (2018). "Fire fragility functions for steel frame buildings: Sensitivity analysis and reliability framework." *Fire Technology*, 55:1175. <https://doi.org/10.1007/s10694-018-0764-5> (Impact factor: 1.483)
- [8] Elhami Khorasani, N., Gernay, T., Garlock, M.E.M. (2017). "Data-driven probabilistic post-earthquake fire ignition model for a community." *Fire Safety Journal*, 94:33-44. (Impact factor: 1.888)
- [7] Gerasimidis, S., Elhami Khorasani, N., Garlock, M.E.M., Pantidis, P, Glassman, J.D. (2017). "Resilience of a tall steel moment resisting frame building with multi-hazard post-event fire consideration." *Journal of Constructional Steel Research*, 139: 202-219. (Impact factor: 2.509)
- [6] Elhami Khorasani, N., Garlock, M.E.M. (2017). "Overview of fire following earthquake: historical events and community responses." *International Journal of Disaster Resilience in the Built Environment*, 8(2): 158-174. (Impact factor: 0.72)
- [5] Elhami Khorasani, N., Garlock, M.E.M., Gardoni, P. (2016). "Probabilistic performance-based evaluation of a tall steel moment resisting frame under fire following earthquake." *Journal of Structural Fire Engineering*, 7(3): 193-216. (Impact factor: 0.74)
- [4] Gernay, T., Elhami Khorasani, N., Garlock, M.E.M. (2016). "Fire fragility curves for steel buildings in a community context: a methodology." *Engineering Structures*. 113: 259-276. (Impact factor: 1.893)
- [3] Elhami Khorasani, N., Garlock, M.E.M., Quiel, S.E. (2015). "Modeling steel structures in OpenSees: enhancements for fire and multi-hazard probabilistic analysis." *Journal of Computers and Structures*, 157: 218-231. (Impact factor: 2.887)
- [2] Elhami Khorasani, N., Gardoni, P., Garlock, M.E.M. (2015). "Probabilistic fire analysis: evaluation of steel structural members." *ASCE Journal of Structural Engineering*, 141(12). (Impact factor: 2.021)
- [1] Elhami Khorasani N., Garlock M.E.M., Gardoni P. (2014). "Fire load: survey data, recent standards, and probabilistic models for office buildings." *Engineering Structures*, Elsevier, 58: 152-165. (Impact factor: 2.755)

JOURNAL PUBLICATIONS (3 under review)

Underlined: student at UB

- [15] Qureshi, R., Ni, S., Elhami Khorasani, N., Van Coile, R., Hopkin, D., Gernay, T. "Probabilistic models for temperature dependent strength of steel and concrete." *Submitted to ASCE Journal of Structural Engineering – special issue on structural fire engineering – in revision.*

[16] Ross, B., Yang, C., Kleiss, C., Okumus, P., Elhami Khorasani, N. “Tessellated structural-architectural systems: a concept for efficient construction, repair, and disassembly,” *Submitted to ASCE Journal of Architectural Engineering – in revision.*

[17] Sarreshtehdari, A., Elhami Khorasani, N. “Emergency response time for post-earthquake fires.” *Submitted to Journal of Earthquake Engineering.*

CONFERENCE PUBLICATIONS (bold indicates presenting author)

Underlined: student at UB

[30] **Van Coile, R.**, Hopkin, D., Elhami Khorasani, N., Lange, D., Gernay, T., (2019). “Permanent and live load model for probabilistic structural fire analysis: a review.” *Proceedings of the third International Conference on Structural Safety under Fire and Blast Loading (CONFAB), London, U.K., September 2-4.*

[29] **Ni, S.**, Van Coile, R., Hopkin, D., Elhami Khorasani, N., Gernay, T. (2019). “Sensitivity studies of the resilience of RC columns to various fire scenarios.” *Proceedings of the IABSE Congress, New York City, NY, September 2-6.*

[28] **Hua, N.**, Tessari, A., Elhami Khorasani, N. (2019). “Design fire scenarios for railway tunnel fires.” *Proceedings of the IABSE Congress, New York City, NY, September 2-6.*

[27] **Van Coile, R.**, Hopkin, D., Elhami Khorasani, N., Gernay, T., (2019). “Demonstrating adequate safety for a concrete column exposed to fire, using probabilistic methods.” *Proceedings of the 15th International Conference and Exhibition on Fire Science and Engineering (Interflam), London, U.K., July 1-3.*

[26] **Hopkin, D.**, Fu, I., Gernay, T., Elhami Khorasani, N., Van Coile, R. (2019). “The MaxEnt method for probabilistic structural fire engineering – performance for multi-modal output.” *Proceedings of the 15th International Conference and Exhibition on Fire Science and Engineering (Interflam), London, U.K., July 1-3.*

[25] **Oureshi, R.**, Ni, S. Elhami Khorasani, N., Van Coile, R., Hopkin, D., Gernay, T. (2019). “Effect of probabilistic strength retention factors for steel and concrete on structural reliability of columns in fire.” *Proceedings of Third International Fire Safety Symposium, Ottawa, Canada, June 5-7.*

[24] **Van Coile, R.**, Gernay, T., Elhami Khorasani, N., Hopkin, D. (2019). “Exploratory study into a safety format for composite columns exposed to fire.” *Proceedings of Applications of Structural Fire Engineering (ASFE) Conference, Singapore, June 13-14.*

[23] **Szasdi Bardales, F.J.**, Masoudvaziri, N., Elhami Khorasani, N., Sun, K. (2019). “Understanding fire spread in wildland urban interface communities.” *Proceedings of the 6th International Fire Behavior and Fuels Control, Albuquerque, NM, April 29-May 3.*

[22] Kumar, D., Deshpande, A.A., **Ranade, R.**, Elhami Khorasani, N. (2018). “Effects of elevated temperatures on residual bond strength of steel rebar with strain hardening cementitious composite.” *Proceedings of the 3rd R.N. Raikar Memorial International Conference and Gettu-Kodur International Symposium on Advances in Science and Technology of Concrete, Mumbai, India, December 14-15.*

[21] Stephani, A., **Van Coile, R.**, Elhami Khorasani, N., Gernay, T., Hopkin, D. (2018). “Probabilistic model for steel yield strength retention factor at elevated temperatures, Influence of model choice on structural failure fragility curve.” *Proceedings of the 16th International Probabilistic Workshop (IPW), Vienna, Austria, September 12-14.*

[20] Qureshi, R., **Elhami Khorasani, N.** (2018). “Instantaneous stiffness correction for hybrid fire testing.” *Proceedings of the 10th International Conference on Structures in Fire, Belfast, U.K., June 6-8.*

[19] **Van Coile, R.**, Gernay, T., Elhami Khorasani, N., Hopkin, D. (2018). “Evaluating uncertainty in response of steel-composite members and assemblies under standard fire exposure – application of the ME-MDRM.” *Proceedings of the 10th International Conference on Structures in Fire, Belfast, U.K., June 6-8.*

[18] **Elhami Khorasani, N.** Billittier, J., Stavridis, A. (2018). “Structural performance of a railway tunnel under different fire scenarios.” *Proceeding of the ASME Joint Rail Conference, Pittsburgh, PA, U.S.A., April 18-20.*

- [17] **Atefi Monfared, K.**, Elhami Khorasani, N. (2017). “A novel assessment of geomechanical and fire hazard in offshore platforms.” *Proceedings of the 70 Years of Canadian Geotechnics and Geoscience – GeoOttawa*. Ottawa, Canada, Oct. 1-4.
- [16] **Elhami Khorasani, N., Fang, C.**, Gernay, T., (2017). “Performance-based fire design and the U.S. prescriptive guidelines: a comparative study.” *Proceedings of the 39th IABSE Symposium*. Vancouver, Canada, Sept. 19-23.
- [15] Elhami Khorasani, N., **Fang, C., Gernay, T.**, (2017). “Comparative fire analysis of steel-concrete composite buildings designed following performance-based and U.S. prescriptive approaches.” *Proceedings of the Applications of Structural Fire Engineering Conference*. Manchester, U.K., Sept. 7-8.
- [14] **Gernay, T.**, Elhami Khorasani, N., Garlock, M. (2017). “Fire risk assessment of multi-story buildings based on fragility analysis.” *Proceedings of the 2nd Int. Fire Safety Symposium - IFireSS*. Naples, Italy, June 7-9
- [13] **Coar, M.**, Elhami Khorasani, N., and Garlock, M.E.M. (2016). “Integrating water and electric systems in post-earthquake fire analysis.” *Proceedings of the International Symposium on Sustainability and Resiliency of Infrastructure*. Taipei, Taiwan, Nov. 9-12.
- [12] **Elhami Khorasani, N.**, Gernay T., and Garlock, M.E.M. (2016). “Probabilistic measures of earthquake effects on fire performance of tall buildings.” *Proceedings of the Sixth International Conference on Structural Engineering, Mechanics, and Computation*. Cape Town, South Africa, Sept. 5-7.
- [11] **Gernay, T.**, Selamet, S., Tondini, N., Elhami Khorasani, N. (2016). “Urban infrastructure resilience to fire disaster: an overview.” *Proceedings of the World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium*, Prague, Czech Republic, June 13-17.
- [10] **Elhami Khorasani, N.**, Gernay T., and Garlock, M.E.M. (2016). “Fire fragility functions for community resilience assessment.” *Proceedings of the 9th International Conference on Structures in Fire*, Princeton, U.S.A., June 8-10.
- [9] **Gernay T.**, Elhami Khorasani, N., and Garlock, M.E.M. (2016). “Critical parameters in deriving fire fragility functions for steel gravity frames.” *Proceedings of the 9th International Conference on Structures in Fire*, Princeton, U.S.A., June 8-10.
- [8] Gernay T., Elhami Khorasani, N., and **Garlock, M.E.M.** (2015). “Tools for measuring a city’s resilience in a fire following earthquake scenario.” *Proceedings of IABSE Conference – Structural Engineering: Providing Solutions to Global Challenges*, Geneva, Switzerland, September 23-25.
- [7] **Garlock, M.E.M.**, Bhatia, A., Elhami Khorasani, N. (2015). “Introducing modern teaching into a classic course on structural art.” *Proceedings of IABSE Conference – Structural Engineering: Providing Solutions to Global Challenges*, Geneva, Switzerland, September 23-25.
- [6] **Gernay T.**, Elhami Khorasani, N., and Garlock, M.E.M. (2015). “Fragility analysis of a steel building in fire and fire following earthquake.” *Proceedings of the First International Conference on Structural Safety under Fire & Blast (CONFAB)*, Glasgow, Scotland, September 2-4.
- [5] **Elhami Khorasani, N.**, Garlock, M.E.M., and Gardoni, P. (2015). “Probabilistic evaluation of a 9-Story MRF subject to post earthquake fires.” *Proceedings of PROTECT2015*, East Lansing, Michigan, June 28-30.
- [4] Elhami Khorasani, N., **Garlock, M.E.M.**, and Gardoni, P. (2014). “Reliability-based approach for evaluation of buildings under post earthquake fires.” *Proceedings of the 8th International Conference on Structures in Fire*, Shanghai, China, June 11-13.
- [3] Elhami Khorasani, N., **Garlock, M.E.M.** (2014). “Using Openses for analyzing a 9-Story steel building under post- earthquake fires.” *Proceedings of the Tenth U.S. National Conference on Earthquake Engineering, Frontiers of Earthquake Engineering*, Anchorage, Alaska, July 21-25.
- [2] **Elhami Khorasani, N.**, Garlock, M.E.M., and Gardoni, P. (2013). “Application of a Bayesian-based methodology in performance evaluation of a steel perimeter column under fire.” *Proceedings of the 11th International Conference on Structural Safety & Reliability*, New York, U.S.A., June 16-20.

[1] **Elhami Khorasani, N.**, Garlock, M.E.M., and Gardoni, P. (2012). “Reliability analysis of steel perimeter columns under fire.” *Proceedings of the 7th Int’l Conf. on Structures in Fire*, Zurich, Switzerland, June 6-8.

BOOK CHAPTER

Underlined: student at UB

[3] Gernay, T., Elhami-Khorasani, N. (2019). “Resilience of the built environment to fire and fire-following-earthquake.” *Handbook on Resilient Structures and Infrastructure*, edited by E. Noroozinejad Farsangi, I. Takewaki, T. Yang, A. Astaneh-Asl, and P. Gardoni. Springer. DOI: 10.1007/978-981-13-7446-3

[2] Elhami Khorasani, N., Coar, M., Sarreshtehdari, A., Garlock, M.E.M. (2019). “A holistic framework to evaluate water availability for post-earthquake firefighting.” *Handbook on Sustainable and Resilient Infrastructure*, edited by P. Gardoni, Routledge Taylor and Francis Group.

[1] Elhami Khorasani, N., Garlock, M.E.M., and Gardoni, P. (2016). “Probabilistic evaluation framework for fire and fire following earthquake.” *Multi-hazard Approaches to Civil Infrastructure Engineering*, edited by P. Gardoni, J.M. Lafave, and Y. Hashash, Springer International Publishing.

OTHER PUBLICATIONS

[2] Anderson, W.V., Winchester M. and E. Khorasani, N. (2005). Inspection Report-Humber River Arch Bridge, Mimico Creek Arch Bridge. *Technical Report submitted by Delcan Corporation to the City of Toronto*.

[1] Elhami Khorasani, N. (2005) Engineering Disasters. *The Project Magazine*. Winter Ed. Volume: 25.

CONFERENCE ABSTRACTS (bold indicates presenting author in the conference)

Underlined: student at UB

[18] **Sarreshtehdari, A.**, Elhami Khorasani, N. (2019). “Emergency Response Time During Post-Earthquake Fires.” Engineering Mechanics Institute Conference, Pasadena, CA, June 2019.

[17] **Coar, M.**, Garlock, M., Sarreshtehdari, A., Elhami Khorasani, N. (2019). “Robustness analysis for fire following earthquake scenarios considering power-water dependencies.” Engineering Mechanics Institute Conference, Pasadena, CA, June 2019.

[16] **Moharrami Gargari, N.**, Sarreshtehdari, A., Elhami Khorasani, N. (2019). “A case study on generating building level fragility for functionality of a non-structural component.” Engineering Mechanics Institute Conference, Pasadena, CA, June 2019.

[15] Moeini, M., **Elhami Khorasani, N.**, Okumus, P., Ross, B. Barrios Kleiss, M.C. (2019). “Characterizing Performance of Tessellated Structural Architectural Systems.” Engineering Mechanics Institute Conference, Pasadena, CA, June 2019.

[14] **Gernay, T.**, Elhami Khorasani, N. (2019). “Numerical analysis of a steel-frame building with composite floors to enable performance-based fire design.” Engineering Mechanics Institute Conference, Pasadena, CA, June 2019.

[13] **Elhami Khorasani, N.** (2019). “Fundamentals of steel design at elevated temperatures and the student’s perception on fire engineering.” Structures Congress, Orlando, FL, April 2019.

[12] Hua, N., Tessari, A., **Elhami Khorasani, N.** (2019). “Application of structural fire engineering for performance-based design of tunnels.” Structures Congress, Orlando, FL, April 2019.

[11] Elhami Khorasani, N., **Gernay, T.**, Stephani, A., Ni, S., Van Coile, R., Hopkin, D. (2018). “Probabilistic strength retention factors for steel and concrete, and effect on structural reliability of columns in fire.” ASTM E05 Workshop on Advancements in Evaluating the Fire Resistance of Structures, Washington, DC, Dec. 2018.

[10] **Masoudvaziri, N.**, Szazdi Bardales, F.J., Elhami Khorasani, N., Sun, K., (2018). “Observation-constrained modeling of wildfire spread in Wildland Urban Interface (WUI) communities in California.” AGU Fall Meeting, Washington D.C., December 2018.

- [9] **Sarreshtehdari, A.**, Elhami Khorasani, N. (2018). “Enhancing community resilience by planning for response time during post-earthquake fires.” International Symposium on Sustainable Systems & Technology (ISSST), Buffalo, NY, June 2018.
- [8] **Oureshi, R.**, Elhami Khorasani, N., Gernay, T. (2018). “Need of active boundary conditions for fire testing.” Engineering Mechanics Institute Conference, Boston, MA, June 2018.
- [7] **Gernay, T.**, Gamba, A., Elhami-Khorasani, N., (2018). “Behavior of steel frame structures under natural fire and collapse mechanisms during cooling.” Structures Congress, San Antonio, Texas, April 2018.
- [6] **Elhami Khorasani, N.**, **Billittier, J.**, Stavridis, A. (2017). “Assessment of structural damage in railway tunnels under fire.” International Forum on High-Speed Railway, Changsha, China, December 2017.
- [5] **Elhami Khorasani, N.**, **Haase, B.**, Gernay, T. (2017). “A comparison of prescriptive and performance-based designs for fire as a primary or secondary event.” Engineering Mechanics Institute Conference, San Diego, CA, June 2017.
- [4] Coar, M., Elhami Khorasani, N., **Sarreshtehdari, A.** and Garlock, M.E.M. (2017). “Community resilience assessment for fire following earthquake using a probabilistic framework.” Engineering Mechanics Institute Conference, San Diego, CA, June 2017.
- [3] Elhami Khorasani, N., **Haase, B.** (2017). “Post-blast fire resistance of low-rise buildings through membrane action of composite floor slabs.” Structures Congress, Denver, Colorado, April 2017.
- [2] **Elhami Khorasani, N.**, Gernay T., Garlock, M.E.M. (2017). “Effects of various design parameters on system-level fire fragility functions for steel buildings.” Structures Congress, Denver, Colorado, April 2017.
- [1] Coar, M., **Elhami Khorasani, N.**, and Garlock, M.E.M. (2016). “Integrating water and electric systems in a post-earthquake fire analysis.” Engineering Mechanics Institute Conference and the Probabilistic Mechanics & Reliability Conference, Vanderbilt University, TN, May 2016.

INVITED TALKS

- [11] “Performance-based fire engineering”, WSP, Buffalo, NY, March 2019.
- [10] “Structural fire engineering and the roadmap to resiliency”, Central South University, Changsha, China, December 2017.
- [9] “Structural fire engineering and the roadmap to resiliency”, University of Toronto, Toronto, Canada, November 2017.
- [8] “Fundamentals of fire engineering for bridges”, NY State-wide Conference on Local Bridges, Syracuse, NY, October 2017.
- [7] “Fundamentals of fire engineering for bridges”, NYSATE 77th Conference, Buffalo, NY, May 2017.
- [6] “Introduction to earthquake engineering”, Structural Dynamics, University of Miami, April 2017.
- [5] “Fundamentals of fire engineering for bridges”, Bridge and Infrastructure Management and Public Policy, University at Buffalo, March 2017.
- [4] “Fire and fire following earthquake: a probabilistic approach,” Worcester Polytechnic Institute, October 2016.
- [3] “Developing system-level fragility functions for performance-based fire engineering of buildings”, JCSS Workshop on probabilistic methods in structural fire engineering, SP Technical Institute of Sweden, October 2016 (presented by Gernay, T.)
- [2] “Fire and fire following earthquake: a probabilistic approach,” Johns Hopkins University, Department of Civil Engineering, April 2015.
- [1] “Probabilistic based evaluation of steel buildings under post earthquake fires”, CEE460: Risk Assessment and Management, Princeton University, April 2013.

STUDENT ADVISING

Doctoral students

Ramla Karim Qureshi, *Advancing performance-based fire engineering through efficient and systematic testing and analysis of structural systems*, expected graduation in 2020.

- Recipient of the Mark Diamond Research Fund, UB, 2017
- Best Poster Award, CSEE, UB, 2018
- UBEEA Leaders in Excellence Award, UB Alumni Association, UB, 2018
- SEAS representative at the 6th Annual Catalyzing Advocacy for Science and Engineering (CASE) Workshop in D.C., March 2019
- CSEE Chair's recognition award, UB, 2019

Amir Sarreshtehdari, *Post-earthquake fire response within a community context*, expected graduation in 2021.

- Third Place Poster Award, EERI competition, CSEE, UB, 2019

Nan Hua (Co-advised with Dr. Anthony Tessari), *Structural fire resistance of tunnels considering soil and concrete liner interaction*, expected graduation in 2021.

Mohammad Moeini (Co-advised with Dr. Pinar Okumus), *Tessellated structural-architectural systems for rapid construction, repair, and disassembly*, expected graduation in 2021.

Master students

Chenyang Fang, *Performance-based fire design and the US prescriptive guidelines: A comparative study*, Spring 2017.

Fernando Jose Szasdi Bardales, *Understanding wildfire spread in wildland-urban interface communities*, Spring 2019.

- Travel, Research, and Educational Experience (TREE) Grant, Association for Fire Ecology (AFE), April 2019

Mohamed Ezz Abdelmoneim Elsayed, (Co-advised with Dr. Pinar Okumus), *Tessellated structural-architectural timber systems*, expected graduation in 2020.

Doctoral committees

Alok Abhay Deshpande, University at Buffalo, Department of Civil, Structural and Environmental Engineering, Fall 2016-Spring 2019.

Zheda Zhu, Lehigh University, Department of Civil and Environmental Engineering, Spring 2017-present.

Max Coar, Princeton University, Department of Civil and Environmental Engineering, Fall 2017-present.

Dhanendra Kumar, University at Buffalo, Department of Civil, Structural and Environmental Engineering, Fall 2018-present.

Dissertation examiner

Xianoe Wei, Ph.D. defense committee, University at Buffalo, Department of Civil, Structural and Environmental Engineering, July 2016.

Ramla Qureshi, M.S. thesis examiner, University at Buffalo, Department of Civil, Structural and Environmental Engineering, August 2016.

Mohammad Syed, M.S. thesis, University at Buffalo, Department of Civil, Structural and Environmental Engineering, May 2019.

Undergraduate research students

Jarlene Rojas, *Quantifying lifeline dependencies under extreme hazards*, LSAMP Summer Research Internship Program, Summer 2016.

Aysegul Sagmal, *Collecting an inventory and harmonizing bridge fragility curves for post-earthquake community assessment*, Spring 2017.

Derek Johnson, *Post-blast fire resistance of low-rise buildings through membrane action of composite floor*, Spring 2017.

Akirah Matthews, *Compiling bridge fragility curves to assess seismic vulnerability*, LSAMP Summer Research Internship Program, Summer 2017.

- Selected to attend the 2017 LSMCE conference based on research poster presentation.

Nayana Sreekumar, *Fundamentals of hybrid fire testing*, Summer Research Assistantship Program, Summer 2017.

Anshul Yadav, *Fundamentals of fire engineering*, Summer Research Assistantship Program, Summer 2018.

Jonathan Mann, *Fragility functions for tessellated structural-architectural systems*, NSF Research Experiences for Undergraduates (REU) program, Summer 2019.

Esther Saula, *Digitized fuel load survey methodology*, LSAMP Summer Research Internship Program, Summer 2019.

Gauhar Nurlybekova, *Digitized fuel load survey methodology*, Kazakhstan exchange student, Summer Research Assistantship Program, Summer 2019.

TEACHING EXPERIENCE

Instructor – University at Buffalo

CIE500/CIE522 Design of Structures for Fire:

Spring 2017 (# students: 32), Spring 2018 (# students: 17), Spring 2019 (# students: 22)

CIE428 Steel Design:

Fall 2016 (# students: 93), Fall 2017 (# students: 51), Fall 2018 (# students: 63)

CIE324 Structural Engineering II:

Spring 2016 (# students: 48)

Summary of teaching evaluations at UB

Course	Semester	No. of students	Class rating	Instructor rating
CIE522	Spring 2019	22	4.70	4.90
CIE522*	Spring 2018	17	4.80	4.90
CIE500	Spring 2017	32	3.80	4.10
CIE428	Fall 2018	63	4.50	4.70
CIE428	Fall 2017	51	4.60	4.80
CIE428	Fall 2016	93	4.53	4.69
CIE324	Spring 2016	48	3.76	4.25

* Ranked in the top quartile across all of the SEAS graduate curriculum

Instructor - Princeton University

MATLAB Workshop, Fall 2014

Assistant Instructor - Princeton University

CEE262 Structures and the Urban Environment – Course administrator, Spring 2015

CEE366 Reinforced Concrete Design, Fall 2011, 2012, 2014

CEE 461 Design of Large Scale Structures – Buildings, Spring 2013, 2014, 2015

CEE 361/MAE 325 Matrix Structural Analysis and Introduction to Finite-Element Methods, Fall 2012

Teaching Assistant – University of Toronto

CIV357 Building Design, 2010

CIV100 Mechanics, Fall 2009

CIV313 Design of Reinforced Concrete Structures, Spring 2009

CIV102 Structures and Materials, an introduction to design, Fall 2008

ACADEMIC SERVICES

University at Buffalo

Undergraduate Studies Advisory Committee Member, University at Buffalo, Department of Civil, Structural and Environmental Engineering, September 2016-present.

WiSE Event Accepted Students Day, presented “The Idea of Structures as Art” with a set of demonstrations to provide an overview of how innovative structural forms and systems can be used to resist different loads. This event also offered a tour of the UB SEESL, March 2018.

Structural Engineering and Earthquake Simulation Laboratory (SEESL) tour, provided tour of SEESL as part of (a) Tinker Camp for high school students promoting women in engineering, and (b) CSE Explore event for high school girls, Summer 2018.

Freshman Mentor Program, EAS202, University at Buffalo, Department of Civil, Structural and Environmental Engineering, Spring 2016, 2017, 2018, 2019.

Faculty Judge for the Annual CSEE Poster Competition, Spring 2016, 2018, 2019.

Professional Services

Proposal reviewer for the Research Grants Council (RGC) of Hong Kong, 2019.

Conference session organizer for two sessions (a total of 24 abstracts) on “Earthquake Resilience and Cascading Effects and Emerging Topics” and “New Developments in Structural Fire Engineering”, the Engineering Mechanics Institute (EMI) Conference, Pasadena, CA, June 2019.

Conference session organizer for a session on Structural-Fire Engineering: Past, Present, and Future, the Engineering Mechanics Institute (EMI) Conference, Boston, MA, June 2018.

ASCE Fire Protection Committee, Lead of Fire Following Earthquake Task Group, preparing a committee report on performance-based design for fire following earthquake. September 2017-present.

Organizing Committee, 9th International Conference on Structures in Fire (SiF), Princeton, NJ, June 2016.

Organizing Committee, Princeton Research Symposium, Princeton, NJ, June 2013.

Journal Reviewer (a total of 50 reviews): Fire Safety Journal (7); Engineering Structures (7); Journal of Constructional Steel Research (6); Journal of Structural Engineering (5); Fire Technology (4); Journal of Structural Fire Engineering (3); Sustainable and Resilient Infrastructure (2); Advances in Structural Engineering (2); Bulletin of Earthquake Engineering (2); Soil Dynamics and Earthquake Engineering (2); Journal of Environmental Management (2); Journal of Earthquake Engineering (1); Canadian Journal of Civil Engineering (1); Automation in Construction (1); Fire and Materials (1); Journal of Engineering Mechanics (1); Thin-Walled Structures (1); Data in Brief (1); Challenges (1).

Article Editor: SAGE Open.

Community Outreach

SC Governor’s school for science and mathematics, South Carolina, Fall 2017, presented an online lecture to engineering high school students about bridge fires. The focus of the was how various engineering disciplines can make contributions to the field of transportation.

Science in Elementary Program at Westminster School, Buffalo, Spring 2017, working with UB volunteers at a local K-8 school with majority of students from minority and underprivileged sections of our community. Through hands-on experiments, this program aims to facilitate self-learning of science among the school students. (<http://www.elementaryschoolscience.org/>)

PROFESSIONAL MEMBERSHIP AND CERTIFICATES

ASCE Fire Protection Committee, 2017-present

International Association for Fire Safety Science (IAFSS) Large Outdoor Fires and the Built Environment working groups, 2018-present

Member of ASCE Risk and Resilience Measurements Committee, 2016-present

Member of ASCE Civil Infrastructure and Lifeline System Committee, 2016-present

Teaching Transcript, the McGraw Center for Teaching and Learning, Princeton, 2014

Certificate of obligated engineer, University of Toronto, 2008

Passport to Safety, Health and Safety Certificate, Ontario, Canada, 2006

Member of the Golden Key International Honor Society, University of Toronto, 2005

PROFESSIONAL REGISTRATION

E.I.T., New Jersey (EIT-03160).