



SUMMARY OF QUALIFICATIONS

Project manager and structural engineer with more than 25 years of experience in earthquake engineering practice and research, natural hazard mitigation, seismic evaluation and strengthening, advanced analysis methods, and strategic planning on structural engineering research needs at the national level. Actively involved in the development of guidelines, codes and standards for existing buildings. Participated in post-earthquake investigations immediately following the 1989 Loma Prieta, 1994 Northridge, 1999 Chi-Chi Taiwan, and 2010 Chile Earthquakes, performing damage assessments and correlation studies with strong motion records. Participated in post-hurricane damage assessments immediately following Hurricane Katrina and Hurricane Rita in 2005.

PROFESSIONAL EXPERIENCE

Applied Technology Council, Redwood City, California, 2005-present

Executive Director – Responsible for strategic and financial management of the organization; project management, oversight, and quality control on the development of ATC products and publications.

Degenkolb Engineers, San Francisco, California, 1989-2005

Principal, Director, Engineering Supervisor – Responsible for engineering project management, business development, and direction of technical staff on building design, consulting, and construction projects.

EDUCATION AND TRAINING

M.S. University of California, Berkeley, 1989

B.S. University of California, Berkeley, 1987, with Honors

REGISTRATIONS

California Structural Engineer, 1995, License No. S 3934

California Civil Engineer, 1991, License No. C 47381

Alaska Civil Engineer, 2005, License No. 11280

AWARDS

Helmut Krawinkler Award, Structural Engineers Association of Northern California, 2015, in recognition of leadership in implementing state-of-the-art research into engineering practice

Fellow, Structural Engineers Association of Northern California, 2012, in recognition of outstanding accomplishment in the field of structural engineering

SEAOC Excellence in Structural Engineering Award, 2014, FEMA P-58 Report

SEAOC Excellence in Structural Engineering Award, 2011, FEMA P-695 Report

ACEC California Engineering Excellence Honor Award, 2010, FEMA P-695 Report

EERI Outstanding Paper Award, 2007, “Update to ASCE/SEI 41 Concrete Provisions”

PROFESSIONAL AFFILIATIONS

Advanced National Seismic System

Technical Integration Committee, Chair 2000-2002

American Institute of Steel Construction

Member 2011-present

American Society of Civil Engineers

Member 1986-present

Standards Committee on Seismic Rehabilitation, Member 1998-present

Building Seismic Safety Council
Project 17 Committee, Member 2015-present
Consortium of Organizations for Strong Motion Observation Systems
Vice President 2015-present
Board Member 2013-present
Earthquake Engineering Research Institute
Member 2000-present
Structural Engineers Association of California
Member 1989-present
Structural Engineers Association of Northern California
Member 1989-present
Existing Buildings Committee, Member 1997-present
Public Affairs and Membership Committee, Chair 1992-93, Member 1990-2000
Steel Seismology Committee, Member 1994-96

SELECTED PUBLICATIONS

Published Papers

Engineers: The Forgotten Stakeholder in the Resilience Conversation, ATC/JCSA 16th U.S.-Japan Workshop on Improvement of Structural Engineering and Resiliency, Nara, Japan, June 2016.

A Risk Communication Game-Changer: The U.S. Resiliency Council (USRC) Building Rating System, ATC/JCSA 15th U.S.-Japan Workshop on Improvement of Structural Engineering and Resiliency, Kohala Coast, Hawaii, December 2014.

FEMA P-58: Phase 2 – Development of Performance-Based Seismic Design Criteria, 10th National Conference on Earthquake Engineering, Anchorage, Alaska, July 2014. Co-author with R. Hamburger and M. Mahoney.

Improved Seismic Performance Factors for Design of New Buildings, 10th National Conference on Earthquake Engineering, Anchorage, Alaska, July 2014. Co-author with C. Kircher, A. Hortacsu, and J. Harris.

Lessons for Concrete Wall Design, Based on Studies of the 2010 Chile Earthquake, 10th National Conference on Earthquake Engineering, Anchorage, Alaska, July 2014. Co-author with K. Telleen and J. Maffei.

Recommended Procedures for Incorporating Soil-Structure Interaction Effects into Seismic Response Analyses for Building Structures, 10th National Conference on Earthquake Engineering, Anchorage, Alaska, July 2014. Co-author with J. Stewart, G. Mylonakis, M. Givens, C.B. Crouse, T. Hutchinson, B. Lizundia, F. Naeim, and F. Ostadan.

FEMA P-58: Next-Generation Building Seismic Performance Assessment Methodology, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012. Co-author with R. Hamburger, C. Rojahn, and M. Mahoney.

Collapse Assessment and Mitigation of Nonductile Concrete Buildings: ATC-76-5/ATC-78/ATC-95, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012. Co-author with K. Elwood, W. Holmes, C. Comartin, C. Rojahn, J. Dragovich, S. McCabe, and M. Mahoney.

Practical Lessons for Concrete Wall Design Based on Studies of the 2010 Chile Earthquake, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, September 2012. Co-author with J. Maffei, K. Telleen, and J. Dragovich.

FEMA P-440A, Effects of Strength and Stiffness Degradation on the Seismic Response of Structural Systems, ATC-SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, California, December 2009.

Guidelines for Design of Structures for Vertical Evacuation from Tsunamis, 14th World Conference on Earthquake Engineering, Beijing, China, October 2008. Co-author with M. Mahoney.

ATC-72-1: Interim Guidelines for Modeling and Acceptance Criteria for Seismic Analysis and Design of Tall Buildings, Structural Engineers Association of California Annual Convention, Kohala Coast, Hawaii, September 2008. Co-author with J. Malley.

Overview and Key Concepts of the ATC-63 Methodology, American Society of Civil Engineers Structures Congress, Vancouver, British Columbia, April 2008. Co-author with C. Kircher.

ATC-62 Advanced Seismic Analysis Methods, Expanding Modeling to Include Nonlinear Degrading Response, Structural Engineers Association of California Annual Convention, Squaw Creek, California, September 2007. Co-author with C. Comartin, and E. Miranda.

Design of Structures for Vertical Evacuation from Tsunamis, ATC/JCSA Twelfth U.S.-Japan Workshop on Improvement of Structural Design and Construction Practices, Kauai, Hawaii, September 2007.

“Update to ASCE/SEI 41 Concrete Provisions,” *Earthquake Spectra*, Vol. 23, No. 3, August 2007. Co-author with K. J. Elwood, A. B. Matamoros, J.W. Wallace, D.E. Lehman, A.D. Mitchell, M.A. Moore, M.T. Valley, L.N. Lowes, C.D. Comartin, and J.P. Moehle. Winner, 2007 EERI Outstanding Paper Award, 2007 SEAOC Excellence in Structural Engineering Award of Merit, 2007 SEAONC Excellence in Structural Engineering Award of Merit, and 2007 LATBSDC President’s Award.

Incorporation of FEMA 440 Recommendations for Improved Inelastic Seismic Analysis in the FEMA 356 Prestandard and Commentary for the Seismic Rehabilitation of Buildings, ATC/JCSA Eleventh U.S.-Japan Workshop on Improvement of Structural Design and Construction Practices, Kobe, Japan, October 2005.

Seismic Rehabilitation with FEMA 356: A Case Study, American Society of Civil Engineers Structures Congress, New York, NY, April 2005. Co-author with A. Mitchell and R. Parra.

Assessment of Nonlinear Static Analysis Procedures for Seismic Evaluation of Building Structures, Seventh U.S. National Conference on Earthquake Engineering, Boston, Massachusetts, July 2002. Co-author with K. Yu and C. Poland.

“Correlating Measured Ground Motion with Observed Damage, 1999 Chi-Chi, Taiwan, Earthquake Reconnaissance Report,” *Earthquake Spectra*, Vol. 17, Supp. A, April 2001, pp. 110-130. Co-author with C. Poland.

Improvements to the FEMA 273 Linear Static Procedure, First U.S.-Japan Workshop on Performance-Based Design Methodology for Reinforced Concrete Buildings, Makena, Hawaii, September 1999. Co-author with C. Poland and W. Low.

Comparison of the Seismic Provisions of Model Building Codes and Standards to the 1994 NEHRP Recommended Provisions, NIST GCR 98-755, National Institute of Standards and Technology, Gaithersburg, Maryland, March 1998. Co-author with C. Poland, D. Hom, and L. Iida.

Major Technical Reports (Lead/Contributing Author or Editor)

Seismic Evaluation of Older Concrete Frame Buildings for Collapse Potential, ATC-78-3 Report, prepared by the Applied Technology Council for the Federal Emergency Management Agency, Redwood City, California, August 2015.

Proceedings of Forum on Performance-Based Structural-Fire Engineering: Examples of Current Practice and Discussion on Future Directions, ATC-128 Report, Applied Technology Council, Redwood City, California, April 2015.

Roadmap for the use of High-Strength Reinforcement in Reinforced Concrete Design, ATC-115 Report, prepared by the Applied Technology Council for the Charles Pankow Foundation, Redwood City, California, December 2014.

Plan for Development of a Prestandard for Evaluation and Retrofit of Wood Light-Frame Dwellings, ATC-110 Report, prepared by the Applied Technology Council for the California Earthquake Authority, Redwood City, California, November 2014.

Recommendations for Seismic Design of Reinforced Concrete Wall Buildings Based on Studies of the 2010 Maule, Chile Earthquake, NIST GCR 14-917-25 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, March 2014.

Cost Analyses and Benefit Studies for Earthquake-Resistant Construction in Memphis, Tennessee, NIST GCR 14-917-26 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, December 2013.

A Framework to Update the Plan to Coordinate NEHRP Post-Earthquake Investigations, NIST GCR 14-917-29 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, November 2013.

Seismic Performance Assessment of Buildings, Methodology and Implementation, FEMA P-58 Report, prepared by the Applied Technology Council for the Federal Emergency Management Agency, Washington, D.C., September 2012.

Soil-Structure Interaction for Building Structures, NIST GCR 12-917-21 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, September 2012.

Comparison of U.S. and Chilean Building Code Requirements and Seismic Design Practice 1985-2010, NIST GCR 12-917-18 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, March 2012.

Research Plan for the Study of Seismic Behavior and Design of Deep, Slender, Wide Flange Structural Steel Beam-Column Members, NIST GCR 11-917-13 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, December 2011.

Evaluation of the FEMA P-695 Methodology for Quantification of Seismic Performance Factors, NIST GCR 10-917-8 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, November 2010.

Modeling and Acceptance Criteria for Seismic Design and Analysis of Tall Buildings, PEER/ATC-72-1 Report, prepared by the Applied Technology Council in cooperation with the Pacific Earthquake Engineering Research Center, Redwood City, California, October 2010.

Applicability of Nonlinear Multiple-Degree-of-Freedom Modeling for Design, NIST GCR 10-917-9 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering, for the National Institute of Standards and Technology, Gaithersburg, Maryland, September 2010.

Program Plan for the Development of Collapse Assessment and Mitigation Strategies for Existing Reinforced Concrete Buildings, NIST GCR 10-917-7 Report, prepared by the Applied Technology Council and the Consortium for Universities for Research in Earthquake Engineering for the National Institute of Standards and Technology, Gaithersburg, Maryland, August 2010.

Quantification of Building Seismic Performance Factors, FEMA P-695 Report, prepared by the Applied Technology Council for the Federal Emergency Management Agency, Washington, D.C., June 2009. Winner, 2011 SEAOC Excellence in Structural Engineering Award of Merit, and 2010 ACEC California Engineering Excellence Honor Award.

Effects of Strength and Stiffness Degradation on Seismic Response, FEMA P-440A Report, prepared by the Applied Technology Council for the Federal Emergency Management Agency, Washington, D.C., June 2009.

Guidelines for Design of Structures for Vertical Evacuation from Tsunamis, FEMA P-646 Report, prepared by the Applied Technology Council for the Federal Emergency Management Agency, Washington, D.C., June 2008.

Reducing the Risks of Nonstructural Earthquake Damage, State of the Art and Practice Report, ATC-69 Report, prepared by the Applied Technology Council for the Federal Emergency Management Agency, Redwood City, California, December 2007.

Prioritized Research for Reducing the Seismic Hazards of Existing Buildings, ATC-73 Report, prepared by the Applied Technology Council for the National Science Foundation, Redwood City, California, December 2007.

Proceedings of Workshop on Tall Building Seismic Design and Analysis Issues, ATC-72 Report, prepared by the Applied Technology Council for the Building Seismic Safety Council of the National Institute of Building Sciences, Redwood City, California, May 2007.

Next-Generation Performance-Based Seismic Design Guidelines, Program Plan for New and Existing Buildings, FEMA 445 Report, developed by the Applied Technology Council for the Federal Emergency Management Agency, Washington, D.C., August 2006.

Performance of Physical Structures in Hurricane Katrina and Hurricane Rita: A Reconnaissance Report, NIST Technical Note 1476, developed by the Applied Technology Council for the National Institute of Standards and Technology, Gaithersburg, Maryland, 2006.

Van Nuys Hotel Testbed Report: Exercising Seismic Performance Assessment, Report No. PEER 2004/xx, Pacific Earthquake Engineering Research Center, University of California, Berkeley, 2005.

Prestandard and Commentary for the Seismic Rehabilitation of Buildings, FEMA 356 Report, developed by the American Society of Civil Engineers for the Federal Emergency Management Agency, Washington, D.C., November 2000. Editor and lead author of ASCE project team.

Global Topics Report on the Prestandard and Commentary for the Seismic Rehabilitation of Buildings, FEMA 357 Report, developed by the American Society of Civil Engineers for the Federal Emergency Management Agency, Washington, D.C., November 2000. Editor and lead author of ASCE project team.

Handbook for the Seismic Evaluation of Buildings – A Prestandard, FEMA 310 Report, developed by the American Society of Civil Engineers for the Federal Emergency Management Agency, Washington, D.C., January 1998.

Verbal Presentations (Unpublished)

Applied Technology Council Project Updates: What's Going On, invited presentation, Los Angeles Tall Buildings Structural Design Council Annual Conference, Los Angeles, California, May 2015.

ATC Projects in Earthquake and Wind Engineering, London Engineering Forum: Current Innovative Projects Showcase, London, United Kingdom, November, 2014.

Applied Technology Council Cliffsnote: What You Should Know but Don't Have Time to Read, invited presentation, Los Angeles Tall Buildings Structural Design Council Annual Conference, Los Angeles, California, May 2012.

Applied Technology Council Cliffsnote: What You Should Know but Don't Have Time to Read, invited presentation, Structural Engineers Association of Northern California Meeting, San Francisco, California, March 2012.

PEER/ATC-72-1 Modeling and Acceptance Criteria for Tall Buildings, Pacific Earthquake Engineering Research Center Seminar: Performance-Based Earthquake Engineering and its Applications to Tall Building Design, San Francisco, California, April 2011.

Current ATC Projects in Earthquake Engineering, Forum on Current and Emerging Capabilities in Structural Engineering, New York, New York, October, 2010.

FEMA P-695 Quantification of Building Seismic Performance Factors, invited presentation, Los Angeles Tall Buildings Structural Design Council Annual Conference, Los Angeles, California, May 2010.

FEMA P-646 Guidelines for Design of Structures for Vertical Evacuation from Tsunamis, guest lecturer, Design for a Sustainable World (CEE 177/277), Stanford University, Stanford, California, May 2010.

FEMA P-695 Quantification of Building Seismic Performance Factors, Structural Engineers Association of New York, Continuing Education Seminar, New York, New York, December 2009.

FEMA P-646 Guidelines for Design of Structures for Vertical Evacuation from Tsunamis, guest lecturer, Design for a Sustainable World (CEE 177/277), Stanford University, Stanford, California, April 2009.

ATC-64 Design and Construction Guidance for Vertical Evacuation from Tsunami, invited presentation, Earthquake Engineering Research Institute Northern California Chapter Meeting, Oakland, California, May 2007.

Overview of FEMA 440 Recommendations and Improvement of Modeling of Nonlinear Degrading Response, invited presentation, American Society of Civil Engineers Structures Congress, Long Beach, California, May 2007.

PEER Van Nuys Testbed – Relation to Presently Accepted Engineering Approaches, invited presentation, Eighth U.S. National Conference on Earthquake Engineering, San Francisco, California, April 2006.

ATC-20i Post-Earthquake Safety Mobile Data Acquisition, invited presentation, Eighth U.S. National Conference on Earthquake Engineering, San Francisco, California, April 2006.

ATC Projects of Significance, Past and Present, invited presentation, Eighth U.S. National Conference on Earthquake Engineering, San Francisco, California, April 2006.