Sergio F. Breña
Professor
Department of Civil and Environmental Engineering
University of Massachusetts Amherst

233 Marston Hall
Amherst, MA 01003-5205
Phone (413) 545-0349
e-mail: brena@umass.edu

Education

University of Texas at Austin
Doctor of Philosophy (Ph.D), Civil Engineering (Structures), 2000
Master of Science in Engineering (Structures), 1990

Universidad Iberoamericana (Mexico City)
B.S. in Civil Engineering, 1989

Academic Experience

University of Massachusetts Amherst, Department of Civil and Environmental Engineering (Structures).
Sept. 2014 – Present: Professor
Sept. 2006 – Aug 2014: Associate Professor
Sept. 2000 – Aug 2006: Assistant Professor

Classes taught
CEE241/CEE241A – Strength of Materials and Laboratory
CEE369 – CEE Laboratory
CEE433 – Reinforced Concrete Design
CEE536 – Advanced Topics in Reinforced Concrete
CEE550 – Introduction to Bridge Engineering
CEE646 – Seismic Structural Analysis

Pontificia Universidad Católica de Valparaiso, Department of Civil Engineering, Valparaiso, Chile.
November 2011: Visiting Professor

École Polytechnique Fédérale de Lausanne, School of Architecture, Civil and Environmental Engineering, Lausanne, Switzerland (on sabbatical leave).
May-July 2009: Visiting Professor

University of Texas at Austin, Department of Civil Engineering.
1996 – 2000: Graduate Research Assistant

Iberoamericana University – Mexico City, Mexico, Department of Civil Engineering.
1991 – 1996: Adjunct Professor

Classes taught
Statics for Architects
Structural Systems I
Reinforced Concrete Structures

Professional Experience

HB Projects and Consulting (Mexico City, Mexico)
1993-1996: Chief Design Engineer - Projects including the seismic rehabilitation of telephone buildings in Mexico, structural design of commercial and residential buildings.

Integral Consulting in Engineering (Mexico City, Mexico)

1992 – 1993: Chief Design Engineer: Tunnel Design Area – Responsible for supervising design of tunnels, vertical shafts, pump houses, and other structures for the Mexico City deep drainage system and Metro.

1991-1992: Design Engineer – Involved in the structural design of the seismic retrofit projects of existing reinforced concrete buildings for TELMEX (Mexican Telephone Company).

HB Construction Company (Mexico City, Mexico)

1987 – 1989: Engineer –Construction bids, resident engineer.

Professional Organizations

1. American Concrete Institute, Fellow (2009) Member 1990 – present
   - Committee 318C (Voting, Secretary 2011-2014) – Safety, Serviceability, and Analysis
   - Committee 369 (Voting, Secretary 2006-2015) – Seismic Repair and Rehabilitation
   - Committee 374 (Voting) - Performance Based Seismic Design of Concrete Buildings
   - ACI Publications Committee 2006-2013 (Voting-Board Appointed)
   - Committee 440 (Associate) - Fiber Reinforced Polymer Reinforcement
   - ACI-ASCE Committee 445 (Associate) – Shear and Torsion

2. Precast/Prestressed Concrete Institute Member 2003 – present
   - Chair (2014 – present), Student Education Committee
   - Faculty Advisor, Big Beam Student Competition 2002 (Best report, 6th place national), 2003 (5th place national), 2007, 2010

3. American Society of Civil Engineering Member 1990 – present
   - UMass-ASCE Student Chapter Faculty Advisor – 2003 through 2007
   - Concrete Canoe Competition Advisor – 2001through 2007 (regional champions in 2004)
   - Member of the ASCE/SEI Chile (Maule) Earthquake Reconnaissance Team – April 2010
   - Member of the ASCE Standards Committee on Seismic Rehabilitation
   - ASCE Designated Member of Project Review Panel for ATC Project 101/Task Order 27 – June 2013

4. Earthquake Engineering Research Institute Member 1990 - present
5. Structural Engineering Institute (ASCE) Member 1996 - present
6. Mexican College of Civil Engineers Life member
7. Boston Society of Civil Engineers Member 2000 – present
8. American Institute of Steel Construction Member 2003 – present

Awards and Honors

Iberoamericana University – B.S. Honorable mention (1989)
Mexican College of Civil Engineers – Awarded life membership (1989)
Texas Department of Transportation – 2000 innovator award
American Society of Civil Engineers (UMass student chapter) – 2005 faculty of the year award
American Society of Civil Engineers (UMass student chapter) – 2016 faculty of the year award
American Concrete Institute
- ACI Fellow (2009)
- Concrete Research Council Research Fellowship (2009-2010)

Precast/Prestressed Concrete Institute – Daniel P. Jenny Research Fellowship (2009-2010, 2010-2011)
Precast/Prestressed Concrete Institute – 2011 Young Educator Award
Pontificia Universidad Católica de Chile – Invited Visiting Professor, November 2011
Phi Kappa Phi Honor Society – 2012

Peer-reviewed Publications

1. Al-Sammari, A. and Breña, S.F., "Finite Element Simulation and Parametric Study of Anchored Fiber-Reinforced Polymer Sheets", *ACI Structural Journal* (in review).

2. Alvarez, J.C., Breña, S.F., and Arwade, S.R. "Nonlinear Backbone Modeling of Concrete Columns Retrofitted with FRP or Steel Jackets", *ACI Structural Journal* (in review).

3. Alves de Souza, R. and Breña, S.F. "Behavior Predictions of Deep Beams with Short Straight Bar Anchorages using Strut-and-Tie Models and Nonlinear Analysis", *IBRACON Structures Journal* (in review).

4. Civjan, S.A., Sit, M.H, Brena, S.F. "Field and Analytical Studies of the First Folded Plate Girder Bridge", *Journal of Bridge Engineering*, ASCE (accepted).

5. Manwell, J.F., McGowan, J.G., Brena, S., Verma, P. "A Comparative Study of a Three Rotor and a Single Rotor 5MW Wind Turbine Based on Economic and Structural Considerations", *Wind Engineering*, Vol. 38, No. 6, 2014, pp. 643-656.

6. Ciftci, C., Arwade, S.R., Kane, B., and Breña, S.F. "Analysis of the Probability of Failure for Open-grown Trees during Wind Storms", *Probabilistic Engineering Mechanics*, Vol. 37, 2014, pp. 41-50.

7. Ciftci, C., Kane, B., Breña, S.F., Arwade, S.R. "Loss in Moment Capacity of Tree Stems Induced by Decay", *Trees*, Vol. 28, 2014, pp. 517-529.

8. Alvarez, J.C. and Breña, S.F. "Non-linear Modeling Parameters for Jacketed Columns Used in Seismic Rehabilitation of RC Buildings". *ACI Special Publication 297- Seismic Assessment of Existing Reinforced Concrete Buildings – New Developments*, Paper no. 297-6, 2014, pp. 6.1-6.22.

9. Breña, S.F., McGuirk, G.N., "Advances on the Behavior Characterization of FRP-Anchored Carbon Fiber-Reinforced Polymer (CFRP) Sheets Used to Strengthen Concrete Elements", *International Journal of Concrete Structures and Materials*, Springer, Vol. 7 (1), March 2013, pp. 3-16.

10. Ciftci, C., Breña, S.F., Kane, B., Arwade, S.R. "The effect of crown architecture on dynamic amplification factor of an open-grown sugar maple (Acer Saccharum L.)", *Trees*, Vol. 27, 2013, pp. 1175-1189.

11. Civjan, S.A., Kalayci, E., Quinn, B.H., Breña, S.F., and Allen C.A. "Observed Integral Abutment Bridge Substructure Response", *Engineering Structures*, Vol. 56, pp. 1177-1191.

12. Mones, R.M. and Breña, S.F., "Hollow-core Slabs with Cast-in-place Toppings: A Study of Interfacial Shear Strength", *PCI Journal*, Vol. 58 (3), pp. 124-141.

13. Krem, M.A., Hoque, S.T., Arwade, S.R. and Breña, S.F., "Structural Configuration and Building Energy Performance", *Journal of Architectural Engineering*, Vol. 19 (1), March 2013, pp. 29-40.

14. Kalayci, E., Civjan, S.A., Breña, S.F., "Parametric Study on the Thermal Response of Curved Integral Abutment Bridges", *Engineering Structures*, Vol. 43, October 2012, pp. 129-138.

15. Breña, S.F., Jeffrey, A.E., and Civjan, S.A. "Evaluation of a Non-Composite Steel Girder Bridge through Live-Load Field Testing", *Journal of Bridge Engineering*, Vol. 18 (7), July 2013, pp. 690-699.

16. Kalayci, E., Civjan, S.A., Breña, S.F., Allen, C.A., "Load Testing and Modeling of Two Integral Abutment Bridges in Vermont, US", *Structural Engineering International*, Journal of IABSE, Vol. 21, No. 2, May 2011, pp. 181-188.

17. Breña, S.F. and Roy, N.C., Closure to Discussion by D. Kumar Sahoo, B. Singh, and P. Bhargava of "Evaluation of Load Transfer and Strut Strength of Deep Beams with Short Longitudinal Bar Anchorages", *ACI Structural Journal*, Vol. 107 (4), July-Aug 2010, pp. 491-493.

18. Breña, S.F., Fernández Ruiz, M., Kostic, N., and Muttoni, A., "Modelling Techniques to Capture the Backbone Envelope Behaviour of Coupling Beams Subjected to Seismic Loading", *Studies and Researches: Annual Review of Structural Concrete*, Politecnico di Milano, Vol. 29, 2009, pp. 53-78.

19. Breña, S.F. and Ihtiyar, O., "Performance of Conventionally Reinforced Coupling Beams Subjected to Cyclic Loading", *ASCE Journal of Structural Engineering*, Vol. 137 (6), June 2011, pp. 665-676.

20. Niemitz, C.W., James, R., and Breña, S.F., "Experimental Behavior of Carbon Fiber-Reinforced Polymer (CFRP) Sheets Attached to Concrete Surfaces using CFRP Anchors", *Journal of Composites for Construction*, ASCE, Vol. 14 (2), March/April 2010, pp. 185-194.

21. Ahern, J., Jennings, L., Fenstermacher, B., Warren, P., Charney, N., Jackson, S., Mullin, J., Kotval, Z., Breña, S., Civjan, S., and Carr, E., "Issues and Methods for Transdisciplinary Planning of Combined Wildlife and Pedestrian Highway Crossings", *Transportation Research Record, No. 2123, Journal of the Transportation Research Board of the National Academies*, Washington, D.C., 129-136.

22. Kane, B. and Breña, S.F., "Forces and stresses generated during rigging operations", *Arboriculture & Urban Forestry*, March 2009, Vol. 35 (2): 68-74.

23. Breña, S.F. and Roy, N.C., "Evaluation of Load Transfer and Strut Strength of Deep Beams with Short Longitudinal Bar Anchorages", *ACI Structural Journal*, Vol. 106 (5), Sept-Oct 2009, pp. 678-689.

24. Roy, N.C., and Breña, S.F., "Behavior of Deep Beams with Short Longitudinal Bar Anchorages", *ACI Structural Journal*, Vol. 105 (4), July-August 2008, pp. 460-470.

25. Breña, S.F. and Morrison, M.C., Closure to 3 Discussions by E. de Souza Sanchez, J. Holtz Silva, and M.T. Gomes Barbosa; R.A. de Souza; and A. Muttoni, N. Kostic, and M. Fernandez Ruiz of "Factors Affecting Strength of Elements Designed using Strut-and-Tie Models", *ACI Structural Journal*, Vol. 105 (2), March-April 2008, pp. 232-236.

26. Breña S.F. and Schlick B.M., "Hysteretic Behavior of Bridge Columns with FRP-Jacketed Lap Splices Designed for Moderate Ductility Enhancement", *Journal of Composites for Construction*, ASCE, Vol. 11 (6), November-December 2007, pp. 565-574.

27. Breña S.F., Bonczar C.H., Civjan S.A., DeJong J.T., and Crovo D.S., "Evaluation of Seasonal and Yearly Behavior of an Integral Abutment Bridge", *Journal of Bridge Engineering*, ASCE, Vol. 12 (3), May-June 2007, pp. 296-305.

28. Breña S.F. and Morrison M.C., "Factors Affecting Strength Calculation of Elements Designed Using Strut-and-Tie Models", *ACI Structural Journal*,Vol. 104 (3), May-June 2007, pp. 267-277.

29. Civjan S.A., Bonczar C.H., Breña S.F., DeJong J.T., and Crovo D.S., "Integral Abutment Bridge Behavior: Parametric Analysis of a Massachusetts Bridge", *Journal of Bridge Engineering*, ASCE, Vol. 12 (1), January-February 2007, pp. 64-71.

30. Breña S.F., Benouaich M.A., Kreger M.L., and Wood S.L., "Fatigue Tests of Reinforced Concrete Beams Strengthened using Carbon Fiber-Reinforced Polymer Composites", *ACI Structural Journal*, Vol. 102 (2), March-April 2005, pp. 305-313.

31. Civjan S.A., Breña S.F., Butler D.A., and Crovo D.S. "Field Monitoring of an Integral Abutment Bridge in Massachusetts", Transportation Research Record (TRR), *Journal of the Transportation Research Board*, No. 1892, National Research Council, 2004, pp. 160-169.

32. Breña S.F. and Macri B. M., "Effect of Carbon-Fiber-Reinforced Polymer Laminate Configuration on the Behavior of Strengthened Reinforced Concrete Beams", *Journal of Composites for Construction*, ASCE, Vol. 8 (3), May-June 2004, pp. 229-240.

33. Breña S.F., Wood S.L., and Kreger M.L., "Full-scale Tests of Bridge Components Strengthened using Carbon Fiber Reinforced Polymer Composites", *ACI Structural Journal*, Vol. 100 (6), November-December 2003, pp. 775-784.

34. Breña S.F. and Steves, M.A., "Increasing the Flexural Capacity of an Existing Reinforced Concrete Bridge in Texas using CFRP Composites", *Field Applications of FRP Reinforcement: Case Studies*, ACI Publication SP-215, 2003, pp. 203-218.

35. Breña S.F., Bramblett R.M., Wood S.L., and Kreger M.L., "Increasing the Flexural Capacity of RC Beams using CFRP Composites", *ACI Structural Journal*, Vol. 100 (1), January-February 2003, pp. 36-46.

Peer-reviewed Conference Proceedings

1. Salem, M.A.M.K, Breña, S.F., Arwade, S.R., Hoque, S.T. and Altwair, N.M. "Concepts in the Design of Lateral-Load Systems in High Rise Buildings to Reduce Operational Energy Consumption", *International Conference on Chemical, Civil and Environmental Engineering (CCEE-2015)*, Istanbul, Turkey, 05-06 June 2015.

2. Bahjat, R., Ericson, D., Breña, S.F. and Civjan, S.A. "Evaluation of Moment Live-load Distribution of a NEXT-F Beam Bridge through Field Load Testing and FE Modeling", *2014 PCI Convention and National Bridge Conference*, Paper no. 88, Washington, DC, 06-09 September 2014.

3. Quinn, B.H., Civjan, S.A., Breña, S.F., and Allen, C.A., "Single-Span Integral Abutment Bridge Response: Straight and Skew Alignments", *2014 TRB Annual Meeting*, Washington, DC.

4. Civjan, S.A., Sit, M.H., Breña, S.F.,"Field and Analytical Studies of the First Folded Plate Girder Bridge", *2014 TRB Annual Conference*.

5. Quinn, B.H., Civjan, S.A., Lahovich, A., Breña, S.F., "Data from the Fitchburg Bridge, an Innovative FRP Arch Structure", *2013 TRB Annual Conference*.

6. Civjan, S.A., Kalayci, E., Breña, S.F., and Allen, C.A., "Three Integral Abutment Bridges in Vermont: Description and Overall Results", *2013 TRB Annual Conference*, (submitted August 2012).

7. Mones, R.M. and Breña, S.F., "Interface Strength of Hollow Core Slabs with Cast-in-place Toppings", *2011 PCI Convention and National Bridge Conference*, Paper no. 78, Salt Lake City, UT, 22-26 October.

8. Civjan, S.A., Kalayci, E., Breña, S.F., Allen, C.A., "Integral Abutment Bridge Monitoring Program in Vermont", *2010 TRB Annual Conference*, Paper no. 10-2510, Washington, D.C.

9. Breña, S.F. and Alcocer, S.M., "Seismic Performance Evaluation of Rehabilitated Reinforced Concrete Columns through Jacketing", *ATC & SEI 2009 Conference on Improving the Seismic Performance of Existing Buildings and Other Structures*, ASCE/ATC, December 9-11, 2009, San Francisco, CA, USA.

10. Sezen, H., Dragovich, J., Ghannoum, W., Lowes, L.N., Breña, S.F., and Elwood, K.J., "Guide for Seismic Rehabilitation of Concrete Buildings: Summary of Future Changes", *ATC & SEI 2009 Conference on Improving the Seismic Performance of Existing Buildings and Other Structures*, ASCE/ATC, December 9-11, 2009, San Francisco, CA, USA.

11. Breña, S.F., Fernández Ruiz, M., and Muttoni, A., "Applications of Stress Fields to Assess the Behavior and Strength of Coupling Beams Subjected to Seismic Actions", *3rd International fib Congress*, Washington, D.C., May 29- June 2, 2010, Paper no. 534.

12. Ahern, J., Jennings, L., Fenstermacher, B., Warren, P., Charney, N., Jackson, S., Mullin, J., Kotval, Z., Breña, S., Civjan, S., and Carr, E., "Issues and Methods for Transdisciplinary Planning of Combined Wildlife and Pedestrian Highway Crossings", *2009 TRB Annual Conference*, TRB Paper Number: 09-0441, Washington, D.C. January 2009.

13. Kalayci, E., Breña, S.F., and Civjan S.A. "Curved Integral Abutment Bridges – Thermal Response Predictions through Finite Element Analysis", *Structures Congress 2009*, ASCE, Austin, TX, April 2009, pp. 213-222.

14. Ihtiyar O. and Breña. S.F. "Assessment of FEMA 356 Techniques for Orthogonally Reinforced Coupling Beams through Experimental Testing, Research Frontiers: FEMA 356/440 & ASCE 41", *2007 Structures Congress: New Horizons and Better Practices*, ASCE, Long Beach, CA, May 2007, 16 pp.

15. Ihtiyar O. and Breña S.F. "Force-Deformation Response of Conventionally Reinforced Coupling Beams: An Evaluation of FEMA 356", *CD ROM Proceedings: 8th National Conference of Earthquake Engineering (8NCEE),* San Francisco, CA, April 2006.

16. Gussenhoven R.B. and Breña S.F. "Fatigue Behavior of Reinforced Concrete Beams Strengthened with Different FRP Laminate Configurations", *7th International Symposium on Fiber Reinforced Polymer Reinforcement for Reinforced Concrete Structures (FRPRCS7),* ACI Special Publication SP-230, 2005, pp. 613-629.

17. Bonczar, C., Breña, S.F., Civjan, S.A., DeJong, J., Crellin, B., and Crovo, D. "Field Data and FEM Modeling of the Orange-Wendell Bridge", Proceedings: 2005 FHWA Conference: Integral Abutment and Jointless Bridges (IAJB 2005), Baltimore, MD, 17-19 March 2005, pp. 163-173.

18. Bonczar, C., Breña, S.F., Civjan, S.A., DeJong, J., and Crovo, D. "Integral Abutment Pile Behavior and Design – Field Data and FEM Studies", Proceedings: 2005 FHWA Conference: Integral Abutment and Jointless Bridges (IAJB 2005), Baltimore, MD, 17-19 March 2005, pp. 174-184.

19. Schlick, B.M. and Breña, S.F., "Seismic Rehabilitation of Reinforced Concrete Bridge Columns in Moderate Earthquake Regions using FRP Composites", *CD-Rom Proceedings: 13th World Conference on Earthquake Engineering*, Vancouver, B.C., 2004.

20. DeJong J.T., Howey D.T., Civjan S.A., Breña S.F., Butler D.S., Crovo D.S., Hourani N., and Connors P. "Influence of Daily and Annual Thermal Variations on Integral Abutment Bridge Performance". American Society of Civil Engineers, GEO-Trans Conference, Los Angeles, CA, 2004, pp.496-505.

21. Civjan S.A., Breña S.F., Butler D.A., and Crovo D.S. "Field Monitoring of an Integral Abutment Bridge in Massachusetts". CD-Rom Proceedings: Transportation Research Board (TRB) 2004 Annual Meeting, Washington, D.C., 2004, Paper no. 04-4172.

22. Breña, S.F., Wood, S.L., and Kreger M.L., "Fatigue Tests of Reinforced Concrete Beams Strengthened using Carbon Fiber Reinforced Polymer Composites", Proceedings: Second International Conference on

Durability of Fibre Reinforced Polymer (FRP) Composites for Construction, Université de Sherbrooke, Sherbrooke, Canada, 2002, pp. 575-586.

23. Breña, S.F., Bramblett, R.M., Wood, S.L., and Kreger M.L., "Flexural Strengthening of Existing Reinforced Concrete Bridges Using Carbon Fiber Reinforced Polymer Composites", CD Rom Proceedings: Structural Faults and Repair 2001, Engineering Technics Press, Edinburgh, U.K., 2001.

24. Breña, S.F., Unal, A., and Wood, S.L., "Seismic Response of Lightly - Reinforced Coupling Beams", CD Rom Proceedings, *Sixth U.S. National Conference on Earthquake Engineering*, EERI, Seattle, Washington, 1998.

Research Reports

1. Ericson, D., Breña, S.F., Civjan, S.A., and Singh, A., "Evaluation of Live-load Distribution Factors for NEXT-F Beam Bridges", Research Report, PCI Daniel P.Jenny Fellowship Program, 2014, 63 pp.

2. McGuirk, G.N. and Breña, S.F., "Development of Anchorage System for FRP Strengthening Applications using Integrated FRP Composte Anchors*", Concrete Research Council Report No. 54*, 2012, 277 pp.

3. Mones, R.M. and Breña, S.F., "Flexural and Shear Strength of Hollow-core Slabs with Cast-in-place Field Topping", Research Report, PCI Daniel P. Jenny Fellowship Program, 2012, 170 pp.

4. Jeffrey, A.E., Breña, S.F., and Civjan, S.A., "Evaluation of Bridge Performance and Rating through Non-destructive Load Testing", *Report no. 2009-1*, Vermont Agency of Transportation, January 2009, 271 pp.

5. Breña S.F**.**, Civjan S.A., and Goodchild M., "Advanced Composite Materials for New England's Transportation Infrastructure: A Study for Implementation and Synthesis of Technology and Practice", *Final Project Report: NETC 01-1*, New England Transportation Consortium, May 2006.

6. Bonczar, Christine H., Civjan, Scott A., Breña, Sergio F., DeJong, Jason, "Behavior of Integral Abutment Bridges: Field Data and Computer Modeling", Final Report prepared for the Massachusetts Highway Department, June 2005.

7. Breña S.F., Bramblett R.M., Benouaich M.A., Wood S.L., and Kreger M.E., "Use of Carbon Fiber Reinforced Polymer Composites to Increase the Flexural Capacity of Reinforced Concrete Beams", *Research Report # 1776-1*, Center for Transportation Research, University of Texas at Austin, 2001, 228 pp.

8. Breña S.F., Wood S.L., and Kreger M.E., "Increasing the Flexural Capacity of Typical Reinforced Concrete Bridges in Texas Using Carbon Fiber Reinforced Polymers", *Research Report # 1776-2*, Center for Transportation Research, University of Texas at Austin, 2001, 266 pp.

9. Aguilar J., Breña S.F., Del Valle E., Iglesias J., Picado M., Jara M., and Jirsa J.O., "Rehabilitation of Existing Reinforced Concrete Buildings in Mexico City – Case Studies", Ferguson Structural Engineering Laboratory, *Report No. PMFSEL 96-3*, 1996, 170 pp.

Summary

Sergio F. Breña has been with the faculty at the University of Massachusetts Amherst since 2000 and currently serves as the coordinator of the Structural Engineering and Mechanics group. He has over 18 years of experience in laboratory and field testing of structures and structural systems. He has published over 50 papers in peer-reviewed journals and peer-reviewed conference proceedings. Additionally, he has over 6 years of

structural design experience in projects involving rehabilitation of existing buildings to improve earthquake performance and structural design of underground structures and tunnel liners, among others.

His research interests include design and behavior of reinforced and prestressed concrete structures, use of fiber-reinforced materials in civil infrastructure applications, and field performance of bridges and buildings. Recent research projects include investigations on the use of fiber-reinforced composites to strengthen existing reinforced concrete beams and columns, design and behavior of structural concrete elements using strut-and-tie models, earthquake performance of coupling beams, field performance of integral abutment bridges, and live-load testing of existing bridges. After the M8.8 - 2010 Maule Earthquake (Chile), he was selected to participate with the ASCE/SEI reconnaissance team that traveled to the area affected by this large magnitude earthquake to document the performance of rehabilitated structures.

He was elected Fellow of the American Concrete Institute (ACI) in 2009, and currently serves as voting member of subcommittee C of the *ACI 318 Building Code* Committee (ACI 318C - Safety, Serviceability, and Analysis) and ACI 369 - Seismic Repair and Rehabilitation. He is also a voting member of ACI 374 - Performance Based Seismic Design of Concrete Buildings. As a member of the Precast/Prestressed Concrete Institute (PCI), he serves as Chair of the PCI Student Education Committee. Since 2007, he has participated with PCI-Northeast delivering the *Basic Prestressed Concrete Design Seminar* to engineers at various producer facilities throughout the northeast. He was charged with updating the course slides for this seminar to reflect changes in ACI 318-08 and, more recently, to update content to ACI 318-14.