

LAURA N. LOWES

Curriculum Vitae

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EDUCATIONAL HISTORY

University of California, Berkeley, CA
Ph.D., Civil Engineering
December 1999

Dissertation: *Finite Element Modeling of Reinforced Concrete Beam-Column Bridge Connections*

University of California, Berkeley, CA
M.S.C.E.
May 1993

University of Washington, Seattle, WA
B.S.C.E.
June 1992

EMPLOYMENT HISTORY

University of Washington, Seattle, WA
Associate Professor, Dept. of Civil and Environmental Engineering, 2007-present

University of Washington, Seattle, WA
Assistant Professor, Dept. of Civil and Environmental Engineering, 2000-2007

Stanford University, Stanford, CA
Assistant Professor, Dept. of Civil and Environmental Engineering, 1999-2000

University of California, Berkeley, CA
Graduate Student Researcher, Dept. of Civil and Environmental Engineering, 1993-1999

AWARDS AND HONORS

Fellow, American Concrete Institute, 2010
Outstanding Earthquake Spectra Paper, 2007, Earthquake Engineering Research Institute
George D. Nasser Award, 2005, Precast / Prestressed Concrete Institute
Japan Society for Promotion of Science, 2002, Short-Term Fellowship
Terman Fellowship, School of Engineering, 1999-2000, Stanford University
Fellowship, 1992-1997, Fannie and John Hertz Foundation
Graduate Fellowship, 1992-1995, National Science Foundation (declined)

PUBLICATIONS

Refereed archival journal publications

Mitra*, N., Mitra, S., Lowes, L.N. "Probabilistic Model for Failure Initiation of Reinforced Concrete Interior Beam-Column Connections Subjected to Seismic Loading." *Engineering Structures* (in press).

Tagawa* H., G. MacRae and L.N. Lowes. "Continuous Column Effects of Gravity Column in U.S. Steel Moment-Resisting Frame Structures – Part 2." *Journal of Structural and Construction Engineering, Transaction of AIJ (In Japanese)*. Vol. 75, No. 650 (2010): 761-770.

Lowes, L.N., Oyen, P. Lehman, D.E. "Evaluation and Calibration of Load-Deformation Models for Concrete Walls" *ACI-SP 265: Thomas T.C. Hsu Symposium: Shear and Torsion in Concrete Structures*. Ed. A. Belarbi, Y.L. Mo, A. Ayoub. Farmington Hills: American Concrete Institute (2009): 171-198.

Elwood, K.J., Matamoros, A. Wallace, J.W. Lehman, D.E. Heintz, J. Mitchell, A., Moore, M. Valley, M. Lowes, L.N., Comartin, C. and J.P. Moehle. "Update to ASCE/SEI 41 Concrete Provisions." *Earthquake Spectra*. 23(3) (2007): 493-523.

Tagawa*, H., G. MacRae and L.N. Lowes. "Probabilistic Evaluation of Seismic Performance of 3D One-Way and Two-Way Steel Moment Frame Structures." *Earthquake Engineering and Structural Dynamics* 37(2008): 681-696.

Lowes, L.N. and G. Miller. "Model Building for Simulation of Nonlinear Structural Response." *Computers and Structures*. Accepted for publication.

Martin*, J., J. Stanton, N. Mitra* and L.N. Lowes, "Experimental Testing to Determine Concrete Fracture Energy Using a Simple Laboratory Test Setup." *ACI Materials Journal*. 104(6) (2007): 575-584.

Berry*, M.P., D.E. Lehman and L.N. Lowes. "Lumped-Plasticity Models for Performance Simulation of Bridge Columns." *ACI Structural Journal*. 105(3) (2008): 270-279.

Tagawa* H., G. MacRae and L.N. Lowes. "Seismic Reliability of 3D 1-Way and 2-Way Steel Moment Frame Structures Evaluated by Probabilistic Approach." *Journal of Structural and Construction Engineering, Transaction of AIJ (In Japanese)*. 618 (2007): 65-72.

Tagawa* H., G. MacRae and L.N. Lowes. "Evaluation of Seismic Response of Multi-Story Structures Using Dynamic Stability Coefficients - Continuous Column Effects in Steel Moment Frames in Perspective of Dynamic Stability Part 1." *Journal of Structural and Construction Engineering, Transaction of AIJ (In Japanese)*. 618 (2007): 57-64.

Tagawa*, H., G. MacRae and L.N. Lowes. "Evaluation of the Simplifications of 2D Moment Frames to 1D Coupled Shear-Flexural-Beam Model." *Journal of Structural and Construction Engineering, Transaction of AIJ (In Japanese)*. 609 (2006): 41-48

Mitra*, N. and L.N. Lowes. "Evaluation, Calibration and Verification of a Reinforced Concrete Beam-Column Joint Model." *Journal of Structural Engineering, ASCE*. 133(1) (2007): 105-120.

* Indicates current or former graduate student

Brown*, P. and L.N. Lowes. "Fragility Functions for Modern Reinforced Concrete Beam-Column Joints." *Earthquake Spectra*. 23(2) (2007): 263-289.

Tagawa*, H., G. MacRae and L.N. Lowes. "Hysteresis Loop Effects on Stability and Maximum Drift of Structures." *Journal of Structural and Construction Engineering, Transaction of AIJ (In Japanese)* 602 (2006): 137-144.

Pagni*, C.A. and L.N. Lowes. "Fragility Functions for Older Reinforced Concrete Beam-Column Joints." *Earthquake Spectra* 22(1) (2006): 215-238.

Banks*, G., L.N. Lowes and J. Stanton. "Analysis and Design for End Effects in Twisted Double Tees." *PCI Journal* 50(3) (2005): 40-59.

Lowes, L.N., J.P. Moehle and S. Govindjee. "A Concrete-Steel Bond Model for Use in Finite Element Modeling of Reinforced Concrete Structures." *ACI Structural Journal* 101(4) (2004): 501-511.

Lowes, L.N. and A. Altoontash*. "Modeling the Response of Reinforced Concrete Beam-Column Joints." *Journal of Structural Engineering, ASCE* 129(12) (2003): 1686-1697.

Lowes, L.N. "Modeling the Response of Reinforced Concrete Bridge Beam-Column Joints. Subjected to Earthquake Loading." *Transportation Research Record* 1814(2002): 253-261.

Lowes, L.N. "A Concrete-Steel Bond Model for Use in Finite Element Modeling of Reinforced Concrete Structures." *ACI SP-205: Finite Element Analysis of Reinforced Concrete Structures*. Ed. K. Willam and T. Tanabe. Farmington Hills: American Concrete Institute (2001): 251-272.

Lowes, L.N. and J.P. Moehle. "Evaluation and Retrofit of Beam-Column T-Joints in Older Reinforced Concrete Bridge Structures," *ACI Structural Journal* 96(4) (1999): 519-532.

Conference proceedings and other non-journal articles – Fully Refereed

Lowes, L.N. Li*, J., "Fragility Functions for Reinforced Concrete Moment Frames," *Proceedings of the 9th U.S. National and 10th Canadian Conference on Earthquake Engineering: 25-29 July 2010, Toronto, CA*. Oakland: EERI, July 2010. Paper 738. 10 p.

Birely*, A., Lowes, L.N., Lehman, D.E., Marley, K., Hart, C., Kuchma, D. "Investigation of the Seismic Response of Slender Concrete Walls," *Proceedings of the 9th U.S. National and 10th Canadian Conference on Earthquake Engineering: 25-29 July 2010, Toronto, CA*. Oakland: EERI, July 2010. Paper 773. 10 p.

Birely*, A., Lowes, L.N., Lehman, D.E. "Practical Linear and Nonlinear Models of Reinforced Concrete Beam-Column Joints in Existing Structures," *Proceedings of the 9th U.S. National and 10th Canadian Conference on Earthquake Engineering: 25-29 July 2010, Toronto, CA*. Oakland: EERI, July 2010. Paper 694. 11 p.

Berman, J.W., Clayton, T.M., Lowes, L.N., Bruneau, M., Fahnstock, L.A., and Tsai, K.C. "Development of a Recentering Steel Plate Shear Wall and Addressing Critical Steel Plate Shear Wall Research Needs" *Proceedings of the Joint 9th National Conference on Earthquake Engineering and 10th Canadian Conference on Earthquake Engineering, Toronto, CA, July 2010*. Oakland: EERI, July 2010. 12 p.

Brown*, P., J. Ji, P. Oyen*, A. Sterns*, D.E. Lehman, L.N. Lowes, D. Kuchma and J. Zhang. "Seismic Behavior, Analysis and Design of Complex Wall Systems." *Proceedings of the 8NCEE: 18-22 April 2006, San Francisco, CA*. Oakland: EERI, April 2006. Paper 532. 12 p.

Lowes, L.N., N. Mitra*, A. Theiss* and C. Paspuleti*. "Modeling Non-Ductile RC Components and Application to the PEER Van Nuys Testbed." *Proceedings of the 8NCEE: 18-22 April 2006, San Francisco, CA*. Oakland: EERI, April 2006. Paper 1792. 9 p.

Mitra*, N. and L.N. Lowes. "Modeling the Behavior of Reinforced Concrete Beam-Column Building Joints Subjected to Earthquake Loading." *Proceedings of the 8NCEE: 18-22 April 2006, San Francisco, CA*. Oakland: EERI, April 2006. 10 p.

Tagawa*, H., G. MacRae, L.N. Lowes and A. Wada. "Dynamic Instability by Link-Element Deformation in Framed-Tube Structures." *Proceedings of the 8NCEE: 18-22 April 2006 San Francisco, CA*. Oakland: EERI, April 2006. 11 p.

Lowes, L.N. and A. Altoontash*. "Modeling the Response of RC Beam-Column Joints." *Proceedings of the 7NCEE: 21-26 July 2002 Boston, MS*. Oakland: EERI, July 2002. 10 p.

Lowes, L.N. "Finite Element Modeling of Reinforced Concrete Beam-Column Connections," *Modeling of Inelastic Behavior of Reinforced Concrete Structures under Seismic Loads*. Ed. B. Shing and T. Tanabe. New York: American Society of Civil Engineers, June 2001. pp. 276-296.

Lowes, L.N., Govindjee, S. and J.P. Moehle. "Analysis of Reinforced-Concrete Beam-Column Bridge Joints," *Proceedings of the Sixth U.S. National Conference on Earthquake Engineering, Seattle, Washington, 31 May – 4 June 1998*. Oakland: EERI, 1998. Paper 85. 12 p.

Conference proceedings and other non-journal articles – Refereed by Abstract Only

Li*, J., Lowes, L.N., "Finite Element Analysis of Bond For Reinforced Concrete Structures," *Proceedings of the Third fib International Congress 2010, May 2010, Washington, D.C.*

Baldvins, N., Berman, J.W., Lowes, L.N., Low, N., and Janes, T. "Performance Based Design Tools for Steel Plate Shear Walls" *Proceedings of the combined ASCE/SEI Structures Congress and North American Steel Construction Conference, Orlando, FL, April 2010*.

Lowes, L.N. Li*, J., "Fragility Curves for Reinforced Concrete Moment Frames," *Proceedings of the 2009 ATC&SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, December 2009*.

Birely*, A., Lowes, L.N., Lehman, D.E. "A Practical Model for Beam-Column Connections Behavior in Reinforced Concrete Frames," *Proceedings of the 2009 ATC&SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, December 2009*.

Lowes, L.N., Lehman, D.E., Birely*, A., Pugh, J., Kuchma, D., Hart, C., Marley, K. "Investigation of the Seismic Response of Slender Concrete Walls." *Proceedings of the SEAOC 2009 Convention, September 2009, San Diego, CA*

Birely*, A., Lehman, D.E., Lowes, L.N. "A Practical Model for Beam-Column Connection Behavior in Reinforced Concrete Frames," *Proceedings of the 2009 Structures Congress and Exposition 29 April – 1 May 2009, Austin, TX*.

Tagawa*, H., MacRae, G., Lowes, L.N., Wada, A. "Analytical Simulation of Progressive Collapse of Perimeter Frames Due to Out-of-Plane Behavior." *Proceedings of the 14th World Conference on Earthquake Engineering. October 2008 Beijing, China 2008.*

Birely*, A., Lehman, D.E., Lowes, L.N. Hart, C., Marley, K, Kuchma, D. "Investigation of the Seismic Behavior and Analysis of Reinforced Concrete Structural Walls." *Proceedings of the 14th World Conference on Earthquake Engineering. October 2008 Beijing, China 2008.*

Hart, C., Marley, K, Kuchma, D., Birely*, A., Lehman, D.E., Lowes, L.N. "Testing of RC Walls Using Advanced Load-Control and Instrumentation Methods." *Proceedings of the 14th World Conference on Earthquake Engineering. October 2008 Beijing, China 2008.*

Lehman, D.E., Lowes, L.N., Birely*, A., Doepker*, B., Kuchma, D. Hart, C., Marley, K. "Performance Assessment of Modern Walled Buildings." *Proceedings of the SEAOC 2008 Convention September 2008, Kona, HI*

Doepker*, B., Lehman, D.E., Lowes, L.N. "Evaluation of Practical Methods for Analysis of Reinforced Concrete Walls," *Proceedings of the 2008 NEES Annual Meeting 18-20 June 2008, Portland, OR.*

Doepker*, B., Lehman, D.E., Lowes, L.N. "Evaluation of Practical Methods for Analysis of Reinforced Concrete Walls," *Proceedings of the 2008 Structures Congress and Exposition 24-26 May 2008, Vancouver, B.C.*

Lowes, L.N., Lehman, D.E., Kuchma, D. and J. Zhang. "Investigation of the Seismic Behavior and Analysis of Reinforced Concrete Structural Walls Using the UIUC NEES Facility." *Proceedings of the 2007 Structures Congress and Exposition. 16-19 May 2007, Long Beach, CA.*

Mohr*, D., Lehman, D.E. and L.N. Lowes. "Performance-Based Design and Nonlinear Modeling of Coupled Shear Walls and Coupling Beams." *Proceedings of the 2007 Structures Congress and Exposition. 16-19 May 2007, Long Beach, CA.*

Doepker*, B.D., Lehman, D.E. and L.N. Lowes, "Modeling the Behavior of Large Scale Shake Table Tests Using Linear Elastic Time History Methods," *Proceedings of the NEES/UCSD Seminar on Analytical Modeling of Reinforced Concrete Walls for Earthquake Resistance. San Diego, CA. December 2006.*

Tagawa*, H., G. MacRae and L.N. Lowes. "Probabilistic Evaluation of Seismic Performance of 3D One-Way and Two-Way Steel Moment-Frame Structures." *Proceedings of STESSA 2006: Behavior of Steel Structures in Seismic Areas, August 14-17 2006, Yokohama, Japan.* Structural Stability Research Council. 2006. 20 p.

Mitra*, N. and L.N. Lowes. "Modeling the Response of RC Beam-Column Joints." *13th World Conference on Earthquake Engineering. 1-6 August 2004 Vancouver, B.C. Canada.* 2004. Paper 1001. 11 p.

Tagawa*, H., G. MacRae and L.N. Lowes. "Evaluation of 1D Simple Structural Models for 2D Steel Frame Structures." *13th World Conference on Earthquake Engineering. 1-6 August 2004 Vancouver, B.C. Canada.* 2004. Paper 1863. 11 p.

Tagawa*, H., G. MacRae and L.N. Lowes. "Evaluation and Mitigation of P- Δ Effects on 2D Frame Behavior." *Proceedings of the 2004 Annual Stability Conference, March 24-27 2004, Long Beach, CA, USA.* Structural Stability Research Council. 2004. 20 p.

Tagawa*, H., G. MacRae and L.N. Lowes. "Evaluation and Mitigation of P-D Effects on 2D Frame Behavior." *STESSA 2003: Proceedings of the Conference on Behaviour of Steel Structures in Seismic Areas, 9-12 June 2003, Naples, Italy.* 2003. pp. 463-470.

Mormann*, M. D. Lehman, L. Lowes, J. Stanton. "Modeling the Earthquake Response of Reinforced Concrete Beam-Column Joints." *Proceedings of the 2003 ASCE/SEI Structures Congress and Exposition: Engineering Smarter, May 2003.* pp 329-334.

Lowes, L.N. "Modeling the Earthquake Response of RC Joints." *The Fourth U.S.-Japan Workshop on Performance-Based Earthquake Engineering Methodology for Reinforced Concrete Building Structures, 22-24 October 2002, Toba, Japan.* 2002. pp. 295-306.

Lowes, L.N. and A. Altoontash*. "Modeling the Response of RC Beam-Column Joints." *Performance of Structure from Research to Design, Proceedings of the 2002 Structures Congress and Exposition. 4-6 April 2002, Denver, Colorado.* Washington, D.C.: ASCE, 2002. 2 p.

Naito, C.J., L.N. Lowes, S. Govindjee and J.P. Moehle. "Design of Innovative Reinforced Concrete Joints," *Proceedings of the 2nd National Seismic Conference on Bridges and Highways, 8-11 July 1997.* Sacramento: Calif. Dept. of Transportation, 1997. 17 p.

Lowes, L.N., C.J. Naito and C.R. Thewalt. "Performance and Design of Constructible Reinforced Concrete Beam-Column Connections," *Proceedings of the Fourth Annual Caltrans Seismic Research Workshop, 8-10 July 1996.* Sacramento: Calif. Dept. of Transportation, 1996. 11 p.

Lowes, L.N. and J.P. Moehle. "Behavior and Rehabilitation of Beam-Column T-Joints in Older Reinforced Concrete Bridge Structures," *Proceedings of the Eleventh World Conference on Earthquake Engineering 23-28 June 1996, Acapulco, Mexico.* Paper 668. 8 p.

Lowes, L.N. and J.P. Moehle. "Behavior and Rehabilitation of Older Reinforced Concrete T-Joints" *Proceedings of the Fourth U.S. Conference on Lifeline Earthquake Engineering, Report: Technical Council on Lifeline Earthquake Engineering Monograph No. 6.* New York: American Society of Civil Engineers, 1995. pp. 596-603.

Lowes, L.N. and J.P. Moehle. "Behavior and Retrofitting of Older Reinforced Concrete Tee Joints," *Proceedings of the Third Annual Caltrans Seismic Research Workshop, June 1994.* Sacramento: California Dept. of Transportation, 1994.

Lowes, L.N. and J.P. Moehle. "Seismic Behavior of As-Built and Upgraded Reinforced Concrete Beam-Column Connections," *Proceedings of the Tenth U.S.-Japan Bridge Engineering Workshop: Design, Modeling, Experimentation and Performance, Lake Tahoe, Nevada.* 1994.

Books edited

Lowes, L.N. and F. Filippou, Editors. *ACI SP-237: Finite Element Analysis of Reinforced Concrete Structures: Proceedings of the International Workshop on Simulation of Post-Peak Response, November 2003.* Farmington Hills: American Concrete Institute. November 2006. 310p.

Lowes, L.N. and G. Miller, Editors. *Proceedings of the 2003 ASCE/SEI Structures Congress and Exposition: Engineering Smarter, May 2003.* 1284 p.

Project Reports

Lowes, L.N., N. Mitra* and A. Altoontash*. *A Beam-Column Joint Model for Simulating the Earthquake Response of Reinforced Concrete Frames*. PEER Report 2003/10. Berkeley: PEER, University of California, February 2004. 70 p.

Pagni*, C.A. and L.N. Lowes. *Prediction of the Economic Impact of Damage to Older RC Beam-Column Joints*. PEER Report 2003/17. Berkeley: PEER, University of California, February 2004. 80 p.

Lowes, L.N. *Finite Element Modeling of Reinforced Concrete Beam-Column Bridge Connections*. Dissertation. University of California, Berkeley. 1999.

Lowes, L.N., D. Figuera, C.J. Naito and C.R. Thewalt. *Experimental Verification of Embedded Concrete Gages Under Cyclic Compression and Tension*. Document prepared for the California Department of Transportation, Division of Structures, March 1996.

Lowes, L.N. and J.P. Moehle. *Seismic Behavior and Retrofit of Older Reinforced Concrete Bridge T-Joints*. Report No. UCB/EERC-95/09. Berkeley: EERC, University of California, September 1995.

Moehle, J.P., Editor, *Preliminary Report on the Seismological and Engineering Aspects of the January 17, 1994 Northridge Earthquake. Preliminary Findings from Field Investigations by a Team from the University of California, Berkeley Immediately Following the Earthquake*. Report No. UCB/EERC-94/01. Berkeley: EERC, University of California, January 1994.

OTHER SCHOLARLY ACTIVITY

Invited lectures and seminars

1. University of California, Berkeley, *Research to Advance Performance-Based Seismic Design of Concrete Walls*, November 2008.
2. 2007 NEES Annual Meeting, Snowbird, UT, *Nonlinear Analysis of Reinforced Concrete Walls Using OpenSees Beam-Column Elements*, May 2007.
3. *Seismic Behavior, Analysis and Design of Complex Wall Systems*. US-Japan NEES/E-Defense Collaborative Earthquake Engineering Research Program Planning Meeting. Kobe, Japan. November 2006.
4. *X-Ray Tomography Investigation of Concrete-Steel Bond*. International Workshop: Microstructure and Micromechanics of Stone Based Infrastructure Materials. Blacksburg, Virginia. October 2006.
5. *Prediction of Damage to Older RC Beam-Column Joints*. International Workshop on Performance-Based Seismic Design (PBSD) -- Concepts and Implementation. Bled, Slovenia. June 2004.
6. *Advances in Structural Simulation*. Pacific Earthquake Engineering Research Center, NSF Site Review. May 2004.
7. *Modeling the Earthquake Response of Beam-Column Joints*. 4th U.S.-Japan Workshop on Performance-Based Seismic Design Methodology for Concrete Buildings. Toba, Japan. October 2002.
8. *Numerical Simulation of Structural Response*. Pacific Earthquake Engineering Research Center, NSF Site Review. May 2001.
9. *Finite Element Modeling of Reinforced Concrete Beam-Column Connections*. Seminar on Post-Peak Behavior of RC Structures Subjected to Seismic Loads, Tokyo. October 1999.

Presentations given at conferences

1. **J. Li***, L.N. Lowes “Finite Element Analysis of Bond For Reinforced Concrete Structures,” Third fib International Congress 2010, May 2010, Washington, D.C.
2. Baldvins*, N., **Berman, J.W.**, Lowes, L.N., Low*, N., and Janes*, T. “Performance Based Design Tools for Steel Plate Shear Walls” ASCE/SEI Structures Congress and North American Steel Construction Conference, Orlando, FL, April 2010. Poster presentation.
3. **L.N. Lowes**, J. Li*, “Fragility Curves for Reinforced Concrete Moment Frames,” 2009 ATC&SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, December 2009.
4. A. Birely*, **L.N. Lowes**, D.E. Lehman, “A Practical Model for Beam-Column Connections Behavior in Reinforced Concrete Frames,” 2009 ATC&SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, December 2009.
5. P. Oyen*, **L.N. Lowes**, D.E. Lehman, “Evaluation and Calibration of Load-Deformation Models for Concrete Walls,” Thomas T. C. Hsu Symposium on Shear and Torsion in Concrete Structures, ACI Fall Convention, November 2009, New Orleans, LA.
6. A. Birely*, **L.N. Lowes**, D.E. Lehman, “Practical Modeling of Reinforced Concrete Beam-Column Joints,” ACI Fall Convention, November 2009, New Orleans, LA.
7. D.E. Lehman, **L.N. Lowes**, A. Birely*, D. Kuchma, C. Hart, K. Marley, “NEES Small-Group Research Project: Seismic Behavior, Analysis and Design of Complex Wall Systems,” 2009 Annual Meeting of the Pacific Earthquake Engineering Research Center, October 2009, San Francisco, CA.
8. **L.N. Lowes**, D.E. Lehman, A. Birely*, D. Kuchma, C. Hart, K. Marley, “Investigation of the Seismic Response of Slender Concrete Walls,” 3rd International Conference on Advances in Experimental Structural Engineering, October 2009, San Francisco, CA.
9. L.N. Lowes, D.E. **Lehman**, A. Birely*, J. Pugh, D. Kuchma, C. Hart, K. Marley, “Investigation of the Seismic Response of Slender Concrete Walls.” 2009 SEAOC Convention, September 2009, San Diego, CA.
10. **J. Li***, L.N. Lowes, “Progressive Bond Failure Investigation Using X-Ray Tomography,” The 2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials, June 2009, Blacksburg, VA.
11. **J. Li***, L.N. Lowes, “Finite Element Modeling of Bond for Reinforced Concrete Structures,” The 2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials, June 2009, Blacksburg, VA.
12. **L.N. Lowes**, D.E. Lehman, A. Birely*, D. Kuchma, C. Hart, K. Marley, “NEES Small-Group Research Project: Seismic Behavior, Analysis and Design of Complex Wall Systems,” NEES and NSF CMMI Annual Meeting, Honolulu, HI, June 2009.
13. **A. Birely***, L.N. Lowes, D.E. Lehman, “Practical Modeling of Reinforced Concrete Beam-Column Joints,” Annual Meeting of the Center for Urban Earthquake Engineering, Tokyo, Japan, March 2009.
14. “Investigation of the Seismic Behavior and Analysis of Reinforced Concrete Structural Walls.” 14th World Conference on Earthquake Engineering. October 2008 Beijing, China. Presentation by A. Birely*.
15. “Evaluation of Practical Methods for Analysis of Reinforced Concrete Walls,” 2008 NEES Annual Meeting. June 2008, Portland, OR.
16. “Evaluation of Practical Methods for Analysis of Reinforced Concrete Walls,” 2008 Structures Congress and Exposition. 24-26 May 2008, Vancouver, B.C.
17. “Investigation of the Seismic Behavior and Analysis of Reinforced Concrete Structural Walls Using the UIUC NEES Facility,” 2007 Structures Congress and Exposition. 16-19 May 2007, Long Beach, CA.
18. “Performance-Based Design and Nonlinear Modeling of Coupled Shear Walls and Coupling Beams,” Structures Congress and Exposition. 16-19 May 2007, Long Beach, CA.

19. "Evaluation of Blind Predictions of the Response of Beam-Column Joints," ACI Spring Convention, 22-26 April 2007, Atlanta, GA.
20. "Blind Prediction of the Response of Beam-Column Joints Using a Joint Super Element," ACI Spring Convention, 22-26 April 2007, Atlanta, GA. Presented by N. Mitra*.
21. "Practical Model of RC Beam-Column Joints," PEER Center Annual Meeting. San Francisco, CA. January 2007. Poster presented by A. Birely*.
22. "Modeling the Behavior of Large Scale Shake Table Tests Using Linear Elastic Time History Methods," NEES/UCSD Seminar on Analytical Modeling of Reinforced Concrete Walls for Earthquake Resistance. San Diego, CA. December 2006. Presentation by B. Doecker*.
23. "Probabilistic Evaluation of Seismic Performance of 3D One-Way and Two-Way Steel Moment-Frame Structures." STESSA 2006: Behavior of Steel Structures in Seismic Areas. Yokohama, Japan. August 2006. Presented by H. Tagawa*.
24. "Seismic Behavior, Analysis and Design of Complex Wall Systems." Eighth National Conference on Earthquake Engineering. San Francisco, CA. April 2006.
25. "Modeling Non-Ductile RC Components and Application to the PEER Van Nuys Testbed." Eighth National Conference on Earthquake Engineering. San Francisco, CA. April 2006.
26. "Modeling the Behavior of Reinforced Concrete Beam-Column Building Joints Subjected to Earthquake Loading." Eighth National Conference on Earthquake Engineering. San Francisco, CA. April 2006. Poster presented by N. Mitra*.
27. "Dynamic Instability by Link-Element Deformation in Framed-Tube Structures." Eighth National Conference on Earthquake Engineering. San Francisco, CA. April 2006. Poster presented by H. Tagawa*.
28. "Strut-and-Tie Modeling for Seismic Design." ACI Spring Convention. Charlotte, NC. March 2006.
29. "Strut-and-Tie Modeling of Interior Beam-Column Joints for Seismic Design." ACI Spring Convention. Charlotte, NC. March 2006.
30. "OpenSees Development and Validation Efforts at University of Washington." OpenSees Developers Symposium. Berkeley, CA. August 2005.
31. "EDP-DM-DV Relationships for RC Components." PEER Center Annual Meeting. Walnut Creek, CA. April 2005.
32. "Seismic Behavior, Analysis and Design of Complex Wall Systems." National Science Foundation and NEES Consortium Inc. NEESR-05 Informational Webcast. December 2004.
33. "Modeling the Response of RC Beam-Column Joints." 13th World Conference on Earthquake Engineering. Vancouver, B.C. Canada. August 2004. Presented by N. Mitra*.
34. "Evaluation of 1D Simple Structural Models for 2D Steel Frame Structures." 13th World Conference on Earthquake Engineering. Vancouver, B.C. Canada. August 2004. Poster presented by H. Tagawa*.
35. "Evaluation and Mitigation of P-D Effects on 2D Frame Behavior." The Annual Stability Conference, Long Beach, CA. March 2004. Presented by H. Tagawa*.
36. "Evaluation and Mitigation of P-D Effects on 2D Frame Behavior." STESSA 2003: Naples, Italy. June 2003. Presented by H. Tagawa*.
37. "Modeling the Earthquake Response of Reinforced Concrete Beam-Column Joints." 2003 ASCE/SEI Structures Congress and Exposition: Engineering Smarter, Seattle, WA. May 2003. Presented by M. Mormann*.
38. "The Impact of Bond on the Response of RC Beam-Column Joints." US-Japan Workshop on Finite Element Analysis of Reinforced Concrete. Maui, Hawaii. November 2003.
39. "Modeling the Earthquake Response of RC Joints." International Conference on Advances and New Challenges in Earthquake Engineering Research. Harbin, China. August 2002.
40. "Modeling the Response of RC Beam-Column Joints." ASCE/SEI Structures Congress. Denver, Colorado. April 2002.
41. "A Concrete-Steel Bond Model for Use in Finite Element Modeling of Reinforced Concrete Structures," American Concrete Institute, Toronto, Canada, October 2000.

42. "Seismic Response of Anchored Headed Reinforcement," American Concrete Institute, Toronto, Canada, October 2000.
43. "Seismic Response of Anchored Headed Reinforcement," American Concrete Institute, San Diego, California, March 2000.
44. "Analysis of Reinforced Concrete Beam-Column Bridge Connections," John A. Blume Center Affiliates Meeting, Stanford, California, May 1999.
45. "Analysis of Reinforced-Concrete Beam-Column Bridge Joints," Sixth U.S. National Conference on Earthquake Engineering," Seattle, Washington. June 1998.
46. "Performance and Design of Constructible Beam-Column Connections," Fourth Caltrans Seismic Research Workshop, Sacramento, California. July 1996.
47. "Behavior and Rehabilitation of Beam-Column T-Joints in Older Reinforced-Concrete Bridge Structures," 11th World Conference on Earthquake Engineering. Mexico. June 1996.
48. "Rehabilitation of Older Reinforced-Concrete Bridge Joints," SEMM Student Colloquia, University of California, Berkeley. September 1995.
49. "Behavior and Rehabilitation of Older Reinforced-Concrete T-Joints," Fourth U.S. Conference on Lifeline Earthquake Engineering, San Francisco, California. April 1995.
50. "Behavior and Retrofitting of Older Reinforced-Concrete Tee-Joints," Third Annual Caltrans Seismic Research Workshop, Sacramento, California. June 1994.

Professional Society Memberships

American Concrete Institute, full member since 1999.

American Society of Civil Engineers, full member since 1999.

Earthquake Engineering Research Institute, full member since 1999.

Journal Reviews Since Fall 2000

Journal	Approx. Number
<i>American Concrete Institute, Structures Journal</i>	5
<i>American Concrete Institute, Special Publications</i>	4
<i>Canadian Journal of Civil Engineering</i>	1
<i>Computer-Aided Civil and Infrastructure Engineering</i>	4
<i>Earthquake Spectra, EERI</i>	6
<i>International Journal of Solids and Structures</i>	1
<i>Journal of Advanced Concrete Technology</i>	1
<i>Journal of Civil Engineering and Management</i>	1
<i>Journal of Earthquake Engineering</i>	4
<i>Journal of Earthquake Engineering and Structural Dynamics</i>	2
<i>Journal of Materials in Civil Engineering, ASCE</i>	2
<i>Journal of Structural Engineering, ASCE</i>	18
<i>Journal of Zhejiang University SCIENCE</i>	2
<i>Materials and Structures</i>	2

GRADUATE STUDENTS

Chaired Doctoral Degrees

Student Name	Thesis Title	Completed	Current Employer
Joshua Pugh, co-chaired with Lehman	In-progress		
Anna Birely, co-chaired with Lehman	In-progress		
Jinjuan Li co-chaired with Lehman	An Investigation of Behavior and Modeling of Bond for Reinforced Concrete	Expected June 2010	
Nilanjan Mitra	An Analytical Study of Reinforced Concrete Beam-Column Joint Behavior under Seismic Loading	Dec. 2006	Indian Institute of Technology, Kharagpur
Hiro Tagawa co-chaired with MacRae		June 2005	General Building Research Corporation of Japan

Chaired Masters Degrees

Student Name	Level of Supervision	Thesis/Paper Title	Completed (Year)	Current Employer
Blake Doepker, Co-chair Lehman	Thesis	Evaluation of Practical Methods for the Evaluation of Concrete Walls	June 2008	
Anna Birely	Coursework only		June 2008	UW PhD
Peter Brown	Thesis	Probabilistic Earthquake Damage Prediction for Reinforced Concrete Building Components	June 2008	
Claudio Osses-Henriquez, Co-chair Lehman	Thesis	Advancements on the Disturbed Stress Field Model	Aug. 2007	KPFF, Seattle
Aaron Sterns	Project		March 2006	
Danya Mohr, Co-chair Lehman	Thesis	Nonlinear Analysis and Performance-Based Design Methods for Reinforced Concrete Shear Walls	June 2007	MKA, Seattle
Paul Oyen, Co-chair Lehman	Thesis	Evaluation of Analytical Tools for Determining the Seismic Response of Reinforced Concrete Shear Walls	Aug. 2006	SGH, Los Angeles
Julie Buktenica	Coursework only		March 2006	
Jeremy Jacobs	Coursework only		March 2006	
Adam Theiss	Thesis	Modeling the Earthquake Response of Older Reinforced Concrete Building Joints	March 2005	MKA, Seattle
Zane Kayner	Coursework only		March 2006	
Catherine Pagni	Thesis	Modeling of Structural Damage of Older Reinforced Concrete Components	Aug. 2003	
Chaitanya Paspuleti	Thesis	Seismic Analysis of an Older Reinforced Concrete Frame Structure	Dec. 2002	

Other significant student supervision (membership on degree and/or reading committee)

Student Name	Level of Supervision	Completed (Year)	Current Employer
Jae Won Jang	PhD Committee Member	March 2007	
Mike Berry	PhD Committee Member	2006	Montana State Univ.
Tyler Ranf	PhD Committee Member	March 2007	
Alex Lindblad	PhD Committee Member	2006	Sandia Nat. Laboratory
Jung Han Yoo	PhD Committee Member	June 2006	
Jon Padvorac	MS Committee Member	2008	
Tyler Sprague	MS Committee Member	2006	UW PhD
Joshua Martin	MS Committee Member	2006	WSDOT
Gregory Banks	MS Committee Member	2004	Berger/ABAM Engineering
Haoli Camarillo	MS Committee Member	2003	
Mohan Chippada	MS Committee Member	2003	
Andrew Ayling	MS Committee Member	2003	
Tomas Tomasson	MS Committee Member	2002	
Alex Lindblad	MS Committee Member	2001	Sandia Nat. Laboratory
Jae Won Jang	MS Committee Member	2001	
Ahmad El Husseini	MS Committee Member	2001	