

# CIVIL AND CONSTRUCTION ENGINEERING

OREGON STATE UNIVERSITY

College of Engineering

**MILLER, Thomas H.**

Associate Professor

**BIRTH DATE**

September 7, 1958

## DEGREES

B.S., (with distinction), Civil Engineering, Cornell University, Ithaca, NY, May 1980

M.E., Civil Engineering, Cornell University, Ithaca, NY, May 1981

Ph.D., Civil Engineering, Cornell University, Ithaca, NY, January 1990

## ACADEMIC POSITIONS

Assistant Head for Civil Engineering, School of Civil and Construction Engineering, Oregon State University, 2006-2015

Associate Professor, School of Civil and Construction Engineering, Oregon State University, 1996-present

Adjunct Faculty, Department of Wood Science and Engineering, Oregon State University, 2012-present

Assistant Professor, Department of Civil Engineering, Oregon State University, 1989-1996

## NON-ACADEMIC POSITIONS

Structural Engineer, CH2M-Hill, Corvallis, OR, 2001-2002, 2004-2008. Seismic rehabilitation design and anti-terrorist design.

Civil Engineering Officer, 174th Tactical Fighter Wing, New York Air National Guard, Civil Engineering Squadron, 1986-1989. Designed a major modification of the Avionics Maintenance facility at Hancock Field, ANGB. Squadron Training Officer.

Research Structural Engineer and Chief of Structural Response Section, Civil Engineering Research Division, Air Force Weapons Laboratory, Kirtland AFB, New Mexico, 1983-1985. Technical Director of conventional high-explosive test program to study weapons effects on protective facilities, utilities and equipment. Performed damage predictions for SALTY DEMO airbase survivability/ operability exercise.

Survivability Initiatives Staff Officer, HQ United States Air Forces in Europe, Ramstein Air Base, Germany, 1981-1983. Structural consultant for protective facility projects in Europe. Developed design concept and performed survivability analysis for TR-1 large-wingspan aircraft shelters. Obtained international staff approval from NATO to increase protection levels of all semi-hardened facilities in Europe.

## FIELDS OF SPECIALIZATION

Structural Engineering: Analysis, Behavior and Mechanics

Earthquake Engineering

Wood Structures

Cold-Formed Steel Structures

Reinforced Concrete Bridges

Protective Structures

## **PROFESSIONAL ACTIVITIES**

### **Registration**

Professional Engineer, Oregon (No. 14,996)

### **Professional Societies**

American Society of Civil Engineers, 1980-present  
Committee on Cold-Formed Members, 1996-2003, 2005-2014  
Chair, 1998-2001  
Seismic Rehabilitation Standards Committee, 1997-present  
Structural Engineering Institute, 1997-present  
Faculty Advisor, OSU Student Chapter, 1997-present  
Faculty Advisor, OSU Steel Bridge Team, 1992-present  
American Society for Engineering Education, 1990-2009  
American Iron and Steel Institute, 1992-present  
Consortium of Universities for Research in Earthquake Engineering, 2001-2003  
Earthquake Engineering Research Institute, 1992-2013  
Faculty Advisor OSU Student Chapter, 1992-2014  
Forest Products Society, 1995-1996  
Pacific Earthquake Engineering Research Center  
Undergraduate Internship Subcommittee, 1999-2001  
Structural Engineers Association of Oregon, 1993-present  
Wood Design Advisory Committee, 1990-1995, 1999-2004

### **Professional Recognition**

FPS Markwardt Wood Engineering Award, 2011  
ASCE Oregon Section Government Engineer of the Year, 2010  
SWST George Marra Award for Excellence in Writing, 2010  
ASCE Outstanding Faculty Advisor Award (national), 2016  
ASCE Region 8 Outstanding Faculty Advisor Award, 2009, 2010, 2011, 2012, 2013, 2014  
ASCE Zone IV Outstanding Faculty Advisor Award, 1999, 2003, 2006  
ASCE Faculty Advisor Certificate of Commendation, 2004, 2005, 2007, 2008  
Lloyd Carter Award for Outstanding Teaching, OSU College of Engineering, 1997  
ASCE Student Chapter Teacher of the Year, 2005, 2006, 2007, 2015, 2016, 2017  
Mortar Board Top Prof, 1997, 2003  
Truss Plate Institute Annual Award for Excellence in Truss Research, 1995  
Austin-Paul Engineering Faculty Award, OSU College of Engineering, 1991, 2017  
Tau Beta Pi, 1979-present  
Faculty Advisor OSU Student Chapter, 1991-1995  
L.L. Stewart Faculty Development Award, 1990, 1998  
Andrew D. White Fellow, Cornell University, 1985-1987  
Air Force Commendation Medal, 1983  
Graduated first in the College of Engineering, Cornell University, 1980  
Fuertes Medal Undergraduate, Cornell University, 1980  
Distinguished Graduate of Air Force ROTC, Cornell University, 1980  
Chi Epsilon, 1980

## PUBLICATIONS

### Technical Journals

- K. Milaj, A. Sinha, T.H. Miller, and J.A. Tokarczyk (2017), "Environmental Utility of Wood Substitution in Commercial Buildings using Life-Cycle Analysis," *Wood and Fiber Science*, 49(3), pp. 338-358.
- K. Walker, T.H. Miller, R. Gupta (2018) "Development of Virtual Visual Sensors for Wood Structural Health Monitoring," *Journal of Testing and Evaluation*, "Vol. 46, No. 1, 2018, pp. 1-9
- W.J. Kirkham, T.H. Miller, and R. Gupta (2016), "Practical Analysis for Horizontal Diaphragm Design of Wood-Frame, Single-Family Dwellings," *Practice Periodical on Structural Design and Construction*, 21(1), 04015005.
- W.J. Kirkham, R. Gupta, and T.H. Miller (2014), "Effects of Roof Pitch and Gypsum Ceilings on the Behavior of Wood Roof Diaphragms," *Journal of Performance of Constructed Facilities*, 29(1), 0414039.
- B.P. Malone, T.H. Miller, and R. Gupta (2014), "Gravity and Wind Load Path Analysis of a Light-Frame and a Traditional Timber Frame Building," *Journal of Architectural Engineering*, 20(4), B4013001, 1-10.
- B.P. Malone, R. Gupta, T.H. Miller, and M.E. Puettmann (2014), "Environmental Impact Assessment of Light-Frame and Timber Frame Buildings," *Journal of Green Building*, 9(2), 102-123.
- K. Alldritt, A. Sinha, T.H. Miller (2014), "Designing a Strand Orientation Pattern for Improved Shear Properties of Oriented Strand Board," *Journal of Materials in Civil Engineering*, 26(7), 04014022, 1-9.
- W. Kirkham, R. Gupta, and T.H. Miller (2014), "State-of the Art: Seismic Behavior of Wood-Frame Residential Structures," *Journal of Structural Engineering*, 140(4), doi: 10.1061/(ASCE)ST.1943-541X.0000861
- K. Pfretzschner, R. Gupta, and T.H. Miller (2014), "Practical Modeling for Load Paths in a Realistic, Light-Frame Wood House," *Journal of Performance of Constructed Facilities*, June, 28(3), 430-439.
- T. Polocoser, T.H. Miller, and R. Gupta (2013), "Evaluation of Remediation Techniques for Circular Holes in the Webs of Wood I-Joists," *Journal of Materials in Civil Engineering*, 25(12): 1898-1909.
- K. Lucksiri, T.H. Miller, R. Gupta, S. Pei, J.W. van de Lindt (2013): "Implementation of Plan Irregularity Rapid Visual Screening for Wood-Frame, Single-Family Dwellings," *Journal of Earthquake Engineering*, 17(4), 497-516.
- A. Sinha, L. Voigt, T. Miller, and R. Gupta (2012), "Neutral Axis of Full-Size Lumber with Multiple Knots," *Advances in Civil Engineering Materials*, Vol.1, No.1, pp.1-16.
- K. Lucksiri, T.H. Miller, R. Gupta, S. Pei, and J.W. van de Lindt (2012), "A Procedure for Rapid Visual Screening for Seismic Safety of Wood-Frame Dwellings with Plan Irregularity," *Engineering Structure*; 36(3): 351-359.
- K. Lucksiri, T.H. Miller, R. Gupta, S. Pei, and J.W. van de Lindt (2012), "Effect of Plan Configuration on Seismic Performance of Single-Story, Wood-Frame Dwellings," *Natural Hazards Review*, 13(1): 24-33.
- T. Potisuk, C. Higgins, T.H. Miller, and S.C. Yim, "Finite Element Analysis of Reinforced Concrete Beams with Corrosion Subjected to Shear," *Advances in Civil Engineering*, Vol. 2011, Article ID 706803, 14 pp., doi:10.1155/2011/706803.
- K.B.D. White, T.H. Miller and R. Gupta, "Effects of Dead Load and Multiple Earthquake Loadings on Seismic Performance of Wood-Frame Shear Walls," *Forest Products Journal*, 60(2): 150-156, 2010.

- S.C. Betts, T.H. Miller and R. Gupta, "Location of the Neutral Axis in Wood Beams – A Preliminary Study," *Wood Material Science and Engineering*, 5:3, 173-180, 2010.
- K. Chansawat, T. Potisuk, T.H. Miller, S.C. Yim and D.I. Kachlakev, "FE Models of GFRP and CFRP Strengthening of Reinforced Concrete Beams," *Advances in Civil Engineering*, Vol. 2009, Article ID 152196, 13 pp., doi:10.1155/2009/152196.
- K.B. White, T.H. Miller, and R. Gupta, "Seismic Performance Testing of Partially and Fully Anchored Wood-Frame Shear Walls," *Wood and Fiber Science*, 41(4): 396-413, October, 2009.
- M.C. Lewis, R. Gupta and T.H. Miller, "Performance of Wood Frame Wall with Thin ECC Shear Panel," *Practice Periodical on Structural Design and Construction*, ASCE, 14(3): 123-129, August, 2009.
- P. Seaders, T.H. Miller and R. Gupta, "Performance of Partially and Fully Anchored Wood-Frame Shear Walls Under Earthquake Loads," *Forest Products Journal*, 59(5): 42-52, May, 2009.
- P. Seaders, R. Gupta and T.H. Miller, "Monotonic and Cyclic Load Testing of Partially and Fully Anchored Wood-Frame Shear Walls," *Wood and Fiber Science*, 41(2): 145-156, April, 2009.
- N. Wallace, and T.H. Miller, "Seismic Screening of Public Facilities in Western Oregon Counties," *Practice Periodical on Structural Design and Construction*, ASCE, 13(4): 189-197, November, 2008.
- P. Baxter, T.H. Miller, and R. Gupta, "Seismic Screening, Evaluation, Rehabilitation and Design Provisions for Wood-Framed Structures," *Practice Periodical on Structural Design and Construction*, ASCE, 12(4): 200-209, November, 2007.
- R.J. Leichti, K. Kleemann, and T.H. Miller. "Boundary condition role in tests of wood compression webs," *Journal of Testing and Evaluation*, 35(5):539-543, 2007.
- K. Chansawat, S.C.S. Yim and T.H. Miller, "Nonlinear Finite Element Analysis of a FRP-Strengthened Reinforced Concrete Bridge," *Journal of Bridge Engineering*, ASCE, 11(1), pp. 21-32, January 2006.
- C. Higgins, T.K. Daniels, D.V. Rosowsky, T.H. Miller and S.C. Yim, "Assessment and Risk Ranking of Conventionally Reinforced Concrete Bridges for Shear," *Transportation Research Record*, No. 1928, pp. 110-117, 2005.
- R.J. Scott, R.J. Leichti and T.H. Miller, "Finite Element Modeling of Log Wall Lateral Force Resistance," *Forest Products Journal*, 55(9), pp. 48-54, September 2005.
- M.J. Donahue, S.E. Dickenson, T.H. Miller and S.C. Yim, "Implications of the Observed Seismic Performance of a Pile Supported Wharf for Numerical Modeling," *Earthquake Spectra*, EERI, Vol. 21, No. 3, pp. 617-634, August 2005.
- R. Gupta, T.H. Miller and M.R. Kittel, "Small-Scale Modeling of Metal-Plate-Connected Wood Truss Joints," *Journal of Testing and Evaluation*, ASTM, Vol. 33, No. 3, pp. 139-149, May 2005.
- R.J. Scott, R.J. Leichti and T.H. Miller, "An Experimental Investigation of Foundation Anchorage Details and Base Shear Capacity for Log Buildings," *Forest Products Journal*, pp. 38-45, April 2005.
- R. Gupta, T.H. Miller and S.M.W. Freilinger, "Short-term Cyclic Performance of Metal-Plate-Connected Wood Truss Joints," *Structural Engineering and Mechanics - An International Journal*, Vol. 17, No. 5, pp. 627-639, May 2004.
- R. Gupta, T.H. Miller and M.J. Redlinger, "Behavior of Metal-Plate-Connected Wood Truss Joints under Wind and Impact Loads," *Forest Products Journal*, Vol. 54, No. 3, pp. 76-84, March 2004.
- J.D. Langlois, R. Gupta, and T.H. Miller, "Effects of Reference Displacement and Damage Accumulation in Wood Shear Walls," *Journal of Structural Engineering*, ASCE, Vol. 130, No. 3, pp. 470-479, March 2004.

- R. Gupta, T.H. Miller and D. Dung, "Practical Solution to Wood Truss Assembly Design Problems," *Practice Periodical on Structural Design and Construction*, ASCE, Vol. 9, No. 1, pp. 54-60, February 2004.
- R. Gupta, L.R. Heck, and T.H. Miller, "Experimental Evaluation of the Torsion Test for Determining Shear Strength of Structural Lumber," *Journal of Testing and Evaluation*, ASTM, Vol. 30, No. 4, pp. 283-290, July 2002.
- R. Gupta, L.R. Heck, and T.H. Miller, "Finite-Element Analysis of the Stress Distribution in a Torsion Test of Full-Size, Structural Lumber," *Journal of Testing and Evaluation*, ASTM, Vol. 30, No. 4, pp. 291-302, July 2002.
- Y.K. Lee and T.H. Miller, "Axial Strength Determination for Gypsum-Sheathed, Cold-Formed Steel Wall Stud Composite Panels," *Journal of Structural Engineering*, ASCE, Vol. 127, No. 6, pp. 608-615, June 2001.
- Y.K. Lee and T.H. Miller, "Limiting Heights for Gypsum-Sheathed, Cold-Formed Steel Wall Studs," *Practice Periodical on Structural Design and Construction*, ASCE, Vol. 6, No. 2, pp. 83-89, May 2001.
- M.E. Waltz, Jr., T.E. McLain, T.H. Miller, and R.J. Leichti, "Discrete Bracing Analysis for Light-Frame Wood-Truss Compression Webs," *Journal of Structural Engineering*, ASCE, Vol. 126, No. 9, pp. 1086-1093, September 2000.
- W.J. Kirkham and T. H. Miller, "Examination of AISC LRFD Shear Lag Design Provisions," *Engineering Journal*, AISC, Vol. 37, No. 3, pp. 83-98, 2000.
- Z. Li, R. Gupta, and T.H. Miller, "A Practical Approach to Modeling of Wood Truss Roof Assemblies," *Practice Periodical on Structural Design and Construction*, ASCE, Vol. 3, No. 3, pp. 119-124, August 1998.
- M. Vatrovec, T.H. Miller, R. Gupta, and S. Lewis, "Modeling of Metal-Plate-Connected Wood Truss Joints: Part II - Application to Overall Truss Model," *Transactions of the ASAE*, Vol. 40, No. 6, pp. 1667-1675, December 1997.
- M.E. Magaña, P. Volz, and T.H. Miller, "Non-linear Decentralized Control of a Flexible Cable-Stayed Beam Structure," *Journal of Vibration and Acoustics*, ASME, Vol. 119, No. 4., pp. 523-526, October 1997.
- S.M. Kent, R. Gupta, and T.H. Miller, "Dynamic Behavior of Metal-Plate-Connected Wood Truss Joints," *Journal of Structural Engineering*, ASCE, Vol. 123, No. 8, pp. 1037-1045, August 1997.
- M. Vatrovec, T.H. Miller, and R. Gupta, "Modeling of Metal-Plate-Connected Wood Truss Joints," *Transactions of the ASAE*, ASAE, Vol. 39, No. 3, pp. 1101-1111, 1996.
- M. Vatrovec, R. Gupta, and T.H. Miller, "Testing and Evaluation of Metal-Plate-Connected Wood Truss Joints," *Journal of Testing and Evaluation*, ASTM, Vol. 24, No. 2, pp. 63-72, March 1996.
- B. Kasal and T.H. Miller, "Stress Design of Wood Beam-Columns Using Exact Second-Order Moments," *Forest Products Journal*, Vol. 45, No. 7/8, pp. 51-53, July/August 1995.
- T.H. Miller and T. Pekoz, "Behavior of Gypsum-Sheathed Cold-Formed Steel Wall Studs," *Journal of Structural Engineering*, ASCE, Vol. 120, No. 5, pp. 1644-1650, May 1994.
- T.H. Miller and T. Pekoz, "Load Eccentricity Effects on Cold-Formed Steel Lipped-Channel Columns," *Journal of Structural Engineering*, ASCE, Vol. 120, No. 3, pp. 805-823, March 1994.
- T.H. Miller and T. Pekoz, "Unstiffened Strip Approach for Perforated Wall Studs," *Journal of Structural Engineering*, ASCE, Vol. 120, No. 2, pp. 410-421, February 1994.
- T.H. Miller and T. Pekoz, "The Behavior of Cold-Formed Steel Wall Stud Assemblies," *Journal of Structural Engineering*, ASCE, Vol. 119, No. 2, pp. 641-651, February 1993.

## Conferences

- K. Sullivan, T.H. Miller, and R. Gupta, "Behavior of Cross-Laminated Timber Diaphragm Panel Connections with Self-Tapping Screws," 2016 *World Conference on Timber Engineering*, 8 pp.
- K. Milaj, A. Sinha, and T. Miller, "Assessment of Environmental Impacts of Wood Substitution in Commercial Construction," 70<sup>th</sup> *International Convention of the Forest Products Society*, June 27-29, 2016.
- K. Sullivan, R. Gupta, and T. Miller, "Behavior of Cross-Laminated Timber Diaphragms, Poster at 70<sup>th</sup> *International Convention of the Forest Products Society*, June 27-29, 2016.
- K. Sullivan, R. Gupta, and T. Miller, "CLT Diaphragm Panel-To-Panel Connections," 58<sup>th</sup> *International Convention, Society of Wood Science and Technology*, June 7-12, 2015.
- T. Huynh, T.H. Miller, and R. Gupta, "Modular Structure: Wind Load Analysis," 58<sup>th</sup> *International Convention, Society of Wood Science and Technology*, June 7-12, 2015.
- K. Walker, T.H. Miller, and R. Gupta, "Use of Virtual Visual Sensors in the Determination of Natural Frequencies of Timber Structures," 58<sup>th</sup> *International Convention, Society of Wood Science and Technology*, June 7-12, 2015.
- W.J. Kirkham, T.H. Miller, and R. Gupta, "Practical Limits on Torsion in Woodframe Single Family Dwellings, *ASCE Structures Congress*, Boston, MA, April 3-5, 2014.
- B.J. Malone, R. Gupta and T. H. Miller, "Timber Frame versus Light Frame: A Study in Quantifying the Differences between Wood Structural Systems through Life Cycle Assessment (LCA) and Structural Analysis Modeling," *Timber Frame Engineering Council Symposium*, Burlington, VT, August 8, 2013.
- R. Gupta, K. Pfretzschner, T. Miller, D. Prevatt, J. van de Lindt, "Practical Modeling Load Paths in a Light-Frame Wood House," *Proc. First International Conference on Performance-Based and Life-cycle Structural Engineering*, Hong Kong, December 5-7, 2012, 33 pp.
- K. Alldritt, A. Sinha, and T.H. Miller, "The Effect of Strand Orientation on Structural Performance of Oriented Strand Board: Off-Axis Alignment," Poster at *Forest Products Society 66th International Convention*, Washington, DC, June 3-5, 2012.
- W. Kirkham, R. Gupta, and T. Miller, "Stiffness of Pitched Wood Roof Diaphragms," Poster at *Forest Products Society 65th International Convention*, Portland, OR, June 19-21, 2011.
- K. Pfretzschner, R. Gupta, and T. Miller, "Evaluation of Critical Load Paths and System Effects in a Wood-Framed House with Realistic, Complex Geometry," Poster at *Forest Products Society 65th International Convention*, Portland, OR, June 19-21, 2011.
- K. Lucksiri, T.H. Miller, and R. Gupta, "Rapid Visual Screening for Plan Irregularity for Single-Family, Wood-Frame Dwellings," Poster at *Forest Products Society 65th International Convention*, Portland, OR, June 19-21, 2011.
- K. Lucksiri, T.H. Miller and R. Gupta, "Effect of Plan Configuration on Seismic Performance of Single-Family Wood-Frame Dwellings," Poster at *Conference on Improving the Seismic Performance of Existing Buildings and Other Structures*, organized by Applied Technology Council and ASCE-SEI, San Francisco, CA, December 9-11, 2009.
- S. Frey and T.H. Miller, "Structural Engineering Instruction: From the Outside In," *Proceedings of the 2005 ASEE Annual Conference and Exposition*, Portland, OR, June, 2005, 8 pp.
- C. Higgins, T.K. Daniels, D. Rosowsky, T.H. Miller and S.C. Yim, "Assessment and Risk-Ranking of Conventionally Reinforced Concrete Bridges for Shear," 84<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2005.

- R. Gupta, T.H. Miller, P. Seaders, K. White and M. Clauson, "Seismic Performance of Wood Shear Walls," *Biographies and Abstracts, Forest Products Society 58th Annual Meeting*, Grand Rapids, Michigan, June, 2004.
- C. Eiden, R. Leichti, T. Miller, M. Clauson, "Dynamic Analysis of Heavy Timber Structures with Friction Dampers," *Proceedings of the 8<sup>th</sup> World Conference on Timber Engineering*, Lahti, Finland, June, 2004, Vol. II, pp. 475-480.
- P. Seaders, R. Gupta and T. Miller, "Performance of Code-Prescribed Wood Shear Walls," *Proceedings of the 8<sup>th</sup> World Conference on Timber Engineering*, Lahti, Finland, June, 2004, Vol. I, pp. 123-128.
- M.J. Donahue, S.E. Dickenson, T.H. Miller, S.C. Yim, "Comparison of 3D Non-Linear Modeling to Recorded Seismic Response for a Pile Supported Wharf," *Proceedings of Ports 2004 Conference- Port Development in the Changing World*, ASCE, Houston, TX, May 2004, 10 pp.
- J.L. Langlois, R. Gupta, and T.H. Miller, "Reference Displacement Effects in Wood Shear Walls Subjected to the CUREE Protocol," *Proceedings of the 7<sup>th</sup> World Conference on Timber Engineering*, Shah Alam, Malaysia, August 2002, pp. 447-454.
- R.J. Leichti, A. Tjahyadi, A. Bienhaus, R. Gupta, T. Miller, and S. Duff, "Design and Behavior of Friction Dampers for Two-Dimensional Braced and Moment-Resisting Timber Frames," *Proceedings of the 7<sup>th</sup> World Conference on Timber Engineering*, Shah Alam, Malaysia, August 2002, pp. 267-274.
- T. Potisuk, D.I. Kachlakev, T.H. Miller, and S.C.S. Yim, "Experimental Verification of FE Models of FRP Strengthened RC Beams," *Proceedings of the Society for Experimental Mechanics Annual Conference on Experimental and Applied Mechanics*, Portland, OR, June 2001, pp. 620-623.
- K. Chansawat, D.I. Kachlakev, T.H. Miller, and S.C.S. Yim, "FE Modeling and Experimental Verification of an FRP Strengthened Bridge," *Proceedings of the Society for Experimental Mechanics Annual Conference on Experimental and Applied Mechanics*, Portland, OR, June 2001, pp. 624-627.
- T. Potisuk, D.I. Kachlakev, T.H. Miller, and S.C.S. Yim, "Effects of Shear Strengthening with GFRP on Reinforced Concrete Beams," *Proceedings of the 46th International Symposium of the Society for the Advancement of Material and Process Engineering*, Long Beach, CA, May 2001, pp. 1759-1771.
- K. Chansawat, D.I. Kachlakev, T.H. Miller, and S.C.S. Yim, "FEA of the Horsetail Creek Bridge Strengthened with FRP Laminates," *Proceedings of the 46th International Symposium of the Society for the Advancement of Material and Process Engineering*, Long Beach, CA, May 2001, pp. 1772-1783.
- D. Dung, R. Gupta and T.H. Miller, "A Practical Method to Model the System Effects of a Metal-Plate-Connected Wood Truss Assembly," ASAE Paper No. 004039, *ASAE Annual International Meeting*, Milwaukee, July 2000.
- Y.K. Lee and T.H. Miller, "Nominal Axial Strength Evaluation for Wall-Braced Wall Stud Column," *Proceedings of the 1999 Conference sponsored by the Korean Society of Civil Engineers*, Kyung-Ju City, South Korea, October 1999, pp. 189-192.
- M. Redlinger, R. Gupta, and T.H. Miller, "Performance of Metal-Plate-Connected Wood Truss Heel Joints Under Wind and Impact Loads," *Proceedings of the RILEM Symposium on Timber Engineering*, Stockholm, Sweden, September 1999.
- M.E. Waltz, T.E. McLain, T.H. Miller and R.J. Leichti, "Validating Procedures for Compression Web Bracing in Light Frame Wood Trusses," *Proceedings of the Pacific Timber Engineering Conference*, Rotura, New Zealand, March 1999.

- M.R. Kittel, R. Gupta, and T.H. Miller, "Small-Scale Modeling of Metal-Plate-Connected Wood Truss Joints," *Proceedings of the World Conference on Timber Engineering*, Montreux, Switzerland, August 1998, 2 pp.
- L.R. Heck, R. Gupta, and T.H. Miller, "The Shear Strength of Full-Scale Structural Lumber Using Torsion Tests," *Proceedings of the World Conference on Timber Engineering*, Montreux, Switzerland, August 1998, 8 pp.
- S. Freilinger, R. Gupta, and T.H. Miller, "Cyclic Performance of Wood Truss Joints," *Proceedings of 'Building to Last: Structures Congress XV'*, Vol. 2, ASCE, Portland, OR, April 1997, pp. 939-943.
- S.M. Kent, R. Gupta and T.H. Miller, "Earthquake Effects on Metal-Plate-Connected Wood Truss Joints," *Proceedings of 'Earthquake Performance and Safety of Timber Structures'*, Forest Products Society, Madison, WI, 1997, pp. 92-100.
- Z. Li, R. Gupta, and T.H. Miller, "A Practical Approach to Model Wood Truss Roof Assemblies," *Proceedings of the International Wood Engineering Conference*, New Orleans, LA, October 1996, pp. 1-259 to 1-266.
- S.M. Kent, R. Gupta, and T.H. Miller, "Dynamic Behavior of Metal-Plate-Connected Wood Truss Joints," *Proceedings of the International Wood Engineering Conference*, New Orleans, LA, October 1996, pp. 1-115 to 1-122.
- S. Freilinger, R. Gupta, and T.H. Miller, "Dynamic Performance of Metal-Plate-Connected Wood Joints," ASAE Paper No. 964114, *American Society of Agricultural Engineers International Meeting*, Phoenix, AZ, July 1996, 11 pp.
- M. Vatevec, T.H. Miller, and R. Gupta, "Finite-Element Analysis of the Overall Behavior of a Metal-Plate-Connected Wood Scissors Truss," ASAE Paper No. 964103, *American Society of Agricultural Engineers International Meeting*, Phoenix, AZ, July 1996, 19 pp.
- A.M. Miller, K. Weerakul, T.H. Miller, and R.J. Leichti, "Modeling a Light-Frame Structure Comprised of Foam-Core Stressed-Skin Panels," *Forest Products Society Annual Meeting*, Technical Forum Presentation, Portland, OR, June 1995, 6 pp.
- M. Vatevec, R. Gupta, and T.H. Miller, "Finite Element Modeling of Metal-Plate-Connected Joints in Wood Trusses," ASAE Paper No. 954586, *American Society of Agricultural Engineers International Meeting*, Chicago, IL, June 1995, 20 pp.
- S. Kent, R. Gupta, and T.H. Miller, "Dynamic Effects on Metal-Plate-Connected Wood Truss Joints," ASAE Paper No. 954458, *American Society of Agricultural Engineers International Meeting*, Chicago, IL, June 1995, 17 pp.
- S. Kent, R. Gupta, and T.H. Miller, "Dynamic Effects on Metal-Plate-Connected Wood Truss Joints," *28th CIB-W18 (Timber Structures) Meeting*, Copenhagen, Denmark, April 1995, 12 pp.
- M. Vatevec, R. Gupta, and T.H. Miller, "Strength and Stiffness of Metal-Plate-Connected Scissors Truss Joints," ASAE Paper No. 944550, St. Joseph, MI, *1994 International Meeting sponsored by the American Society of Agricultural Engineers*, Atlanta, GA, December 1994, 16 pp.
- P. Volz, M.E. Magaña, A.G. Hernried, and T.H. Miller, "A Decentralized Active Controller for Cable-Stayed Bridges," *Proceedings of the First World Conference on Structural Control*, Vol. 3, pp. FA1-13 to FA1-22, Los Angeles, CA, August 1994.
- B. Kasal, R.J. Leichti, A.M. Miller, and T.H. Miller, "Expansion Analysis to Determine Stresses for Individual Elements in Light-Framed and Foam-Core-Panel Wood Buildings," *Proceedings of the Second International Workshop on Full-Scale Behavior of Low Rise Buildings*, James Cook University of North Queensland, Townsville, Australia, July 1994, 11 pp.



- M. Vatovec, R. Gupta, and T.H. Miller, "Influence of Joint Stiffnesses on the Behavior of Wood Trusses," ASAE Paper No. 934004, St. Joseph, MI, *1993 International Summer Meeting sponsored by the American Society of Agricultural Engineers and the Canadian Society of Agricultural Engineering*, Spokane, WA, June 1993, 12 pp.
- T.H. Miller and T. Pekoz, "Studies on the Behavior of Cold-Formed Steel Wall Stud Assemblies," *Proceedings of the Tenth International Specialty Conference on Cold-Formed Steel Structures*, St. Louis, MO, October 1990, pp. 149-166.

### Reports and Others

- R. Gupta, T. Q. Huynh, and T. H. Miller, "Lateral Load Path Analysis: Modern Building Systems' 28' x 64' Modular Structure," Project Report submitted to Modern Building Systems, July 2106, 165 pp.
- K. Milaj, A. Sinha, and T.H. Miller, "Quantifying the Environmental Utility of Wood Substitution in Commercial Construction," In Sinha and White, ed. *Economic and Environmental Utility of Expanded Green Building in Oregon Commercial Construction and Renovation*. Project Report submitted to Oregon Department of Forestry, July, 2015.
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- C. Higgins, T.H. Miller, D.V. Rosowsky, S.C. Yim, T. Potisuk, T.K. Daniels, B.S. Nicholas, M.J. Robelo, A-Y. Lee, and R. W. Forrest, SPR-350 and SR 500-091 Final Report, "Assessment Methodology for Diagonally Cracked Reinforced Concrete Deck Girders," Oregon Department of Transportation, Salem, OR and Federal Highway Administration, Washington, DC, October 2004, 340 pp. + appendices.
- R. Leichti, R. Scott and T. Miller, "Lateral Resistance of Log Walls and Foundation Anchorage," *Wood Design Focus*, Vol. 14, No. 1, Spring, 2004, pp. 3-7.
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- D. Kachlakev, T. Miller, S. Yim, D. Seamanontapriya, "Behavior of FRP Composite-Strengthened Beams under Static and Cyclic Loading," Summary Report, Project 387.011, for Oregon Department of Transportation, Salem, OR, and Federal Highway Administration, Washington, DC, June 2001, 5 pp.
- D. Kachlakev, T. Miller, S. Yim, K. Chansawat and T. Potisuk, "Finite Element Modeling of Concrete Structures Strengthened with FRP Laminates," Final Report, SPR 316, Report No. FHWA-OR-RD-01-17, for Oregon Department of Transportation, Salem, OR, and Federal Highway Administration, Washington, DC, May 2001, 111 pp.
- R. Gupta and T. Miller, "Up on the Roof: Researchers Study System Effects in Wood Truss Assemblies," *Resource* magazine, American Society of Agricultural Engineers, November 2000, pp. 9-10.
- T. MacKenzie and T.H. Miller, "Local Buckling of Cold-Formed Steel Stub Columns with Various Shapes and Sizes of Web Perforations," Oregon State University, CCEE Department, Corvallis, OR, October 2000, 235 pp.
- P. Limkatanyoo and T. H. Miller, "Integrated Visualization of Structural Behavior," Oregon State University, CCEE Department, Corvallis, OR, October 2000, 173 pp.
- T.H. Miller and Y.K. Lee, "Testing of Cold-Formed Steel Slide Clip Connections," Dept. of Civil, Construction and Environmental Engineering, Oregon State University, September 1999, 11 pp.
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- B.A. Vinson and T.H. Miller, "Pilot Project: Eugene-Springfield Earthquake Damage and Loss Estimate," Department of Civil, Construction and Environmental Engineering, Oregon State University, January 1999, 47 pp., and Data Appendix, HAZUS Input/Output Appendix.
- E.W. Tornberg and T.H. Miller, "Engineering Analysis for the Manufactured Home Anchoring Task Force," Department of Civil, Construction and Environmental Engineering, Oregon State University, July 1998, 88 pp.
- Y.K. Lee and T.H. Miller, "Final Report on Composite Wall Tests," Department of Civil, Construction and Environmental Engineering, Oregon State University, July 1997, 175 pp.
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- Y.K. Lee and T.H. Miller, "Analysis of Gypsum-Sheathed Cold-Formed Steel Wall Stud Panels," Dept. of Civil Engineering, Oregon State University, October 1995, 226 pp.
- J.M. Neuschwander and T.H. Miller, "Pressure Vessel Supports: A Seismic Evaluation for Oregon," Dept. of Civil Engineering, Oregon State University, July 1995, 98 pp.

- K. Sucharitsanchai, S.R. Trautwein, and T.H. Miller, "Seismic Analysis, Conceptual Design and Cost Estimate for Rehabilitation of URM Buildings on the OSU Campus," Dept. of Civil Engineering, Oregon State University, July 1995, 213 pp.
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- T.H. Miller, J.D. Ferguson, G.B. Ch'ng, "Seismic Risk Assessment and Retrofit Design Concepts for Oregon State University Campus Buildings," Dept. of Civil Engineering, Oregon State University, June 1993, 251 pp.
- T.H. Miller, G. Ch-ng, J. Ferguson, "Structural Evaluation of Student Life Facilities at Oregon State University for Potential Seismic Hazards," Dept. of Civil Engineering, Oregon State University, August 1992, 176 pp.
- T.H. Miller, G. Ch-ng, J. Ferguson, "Preliminary Evaluation of Student Life Facilities at Oregon State University for Potential Seismic Hazards," Dept. of Civil Engineering, Oregon State University, July 1992, 72 pp.
- T.H. Miller, J. Ferguson, A. Mann, J. Henegar, "Structural Evaluation of Academic Facilities at Oregon State University for Potential Seismic Hazards," Dept. of Civil Engineering, Oregon State University, February 1992, pp. 623 pp.
- T.H. Miller, J. Ferguson, A. Mann, D. Arguedas, "Preliminary Evaluation of Academic Facilities at Oregon State University for Potential Seismic Hazards," Dept. of Civil Engineering, Oregon State University, December 1991, 209 pp.
- T.H. Miller, "Testing of Cold-Formed Steel Wall Stud Panels Subject to Lateral Loadings," Final Report for Metal Stud Manufacturer's Association, Dept. of Civil Engineering, Oregon State University, Corvallis, OR, October 1990, 124 pp.
- T.H. Miller, "Behavior of Cold-Formed Steel Wall Stud Assemblies Subject to Eccentric Axial Loads," Ph.D. Dissertation, Cornell University, Ithaca, NY, January 1990, 288 pp.
- T.H. Miller, "Evaluation of Stub Column Test Results," Report for Metal Lath/Steel Framing Association, Corvallis, OR, January 1990, 31 pp.
- T.H. Miller, T. Pekoz, "Studies on the Behavior of Cold-Formed Steel Wall Stud Assemblies," Report, Cornell University, School of Civil and Environ. Engineering, Ithaca, NY, November 1989, 288 pp.

## RESEARCH

- "Cross-Laminated Timber Fastener Solutions for Tall Wood Buildings," (Co-PI with A. Sinha and J. Nairn), Institute for Working Forest Landscapes, National Center for Advanced Wood Products Manufacturing and Design, July 1, 2016 – June 30, 2019 (\$149,976).
- "Behavior of CLT Diaphragm Panel-to-Panel Connections with Self-Tapping Screws," (PI with R. Gupta), Institute for Working Forest Landscapes, National Center for Advanced Wood Products Manufacturing and Design, March 1, 2016 – February 28, 2018 (\$149,849).
- "Active Learning with 3-D Printed Models in Structural Engineering," (Co-PI with J. Liu and A. Barbosa), OSU Learning Innovation Grant, January 1, 2016 – October 15, 2016 (\$8,349).
- "Evaluation of Structural Load Paths in Wood-Frame Residential Structures," (Co-PI with R. Gupta and K. Martin), USDA Center Grant: Oregon State University Center for Wood Utilization Research, July 1, 2010 – June 1, 2012 (\$55,000).
- "Gypsum-Sheathed, 18 mil Cold-Formed Steel Stud Wall Testing on Supreme Framing Systems," Scafc0 Steel Stud Manufacturing Co. and Supreme Steel Framing System Association, July, 2009 - November, 2009 (\$13,800 service and testing contract).

- “Analysis of Effect of  $\beta_o$  on Wall Test Results,” Scafco Steel Stud Manufacturing Co. and Supreme Steel Framing System Association, July, 2009 – August, 2009 (\$2000 service and testing contract).
- “Gypsum-Sheathed, Cold-Formed Steel Stud Wall Testing,” Scafco Steel Stud Manufacturing Co., May 15, 2007 – July 31, 2008 (\$80,400 service and testing contract).
- “Statewide Seismic Needs Assessment Project,” Oregon Department of Geology and Mineral Industries, June 2006 – December 2006 (\$77,764).
- “Dynamic Performance of Wood Shear Walls Under Actual Earthquake Records,” (co-PI with Rakesh Gupta), U.S. Department of Agriculture, October 2002 – November 2006 (\$115,000).
- “FEMA 154 Seismic Evaluations of Community Colleges,” Oregon Department of Community Colleges and Workforce Development, July 2005 - December 2005 (\$15,000 service and testing contract).
- “Strength Deterioration Models and Repair Methods for Shear-Cracked Reinforced Concrete Bridges - Phase I,” ODOT, October 2002 – June 2004, co-PI with Chris Higgins and Solomon Yim (\$1,575,300).
- “FEMA 154 Seismic Evaluations of Community Colleges,” Oregon Department of Geology and Mineral Industries, February 15, 2004 - August 15, 2004 (\$4,025 service and testing contract).
- “Remaining Life of Reinforced Concrete Beams with Shear Cracks,” (co-PI with Chris Higgins and Solomon Yim), Oregon Department of Transportation, September 2001–August 2003 (\$160,000).
- “Shear Capacity Assessment of Corrosion-Damaged Reinforced Concrete Beams,” (co-PI with Chris Higgins, Solomon Yim and Albany Research Center), Oregon Department of Transportation, May 2001–December 2002 (\$92,000).
- “Composite Wall Testing,” Steel Stud Manufacturer’s Association, April 24, 2000–September 30, 2001 (\$22,000 service and testing contract).
- “Finite Element Method Modeling for Composite Strengthening/Retrofit of Bridges,” (Co-PI with D. Kachlakev and S. Yim), Oregon Department of Transportation, July 15, 1998–March 31, 2001 (\$93,979).
- “Slide Clip Connection Tests,” Scafco Corporation, December 12, 1998–September 30, 1999 (\$3,515 service and testing contract).
- “Pilot Project: Eugene-Springfield Earthquake Damage and Loss Estimate,” State of Oregon Department of Geology and Mineral Industries, March 1, 1997–January 31, 1999 (\$9,250).
- “Engineering Services for the Manufactured Home Anchoring Task Force,” State of Oregon Building Codes Division, January 1, 1998-June 15, 1998 (\$13,500).
- “Robust Nonlinear Decentralized Control of Cable Supported Bridge Structures,” (Co-PI with A. Hernried and M. Magaña), National Science Foundation, August 15, 1993-December 31, 1997 (\$204,900).
- “Dynamic Characteristics of Metal-Plate-Connected Wood Joints,” (Co-PI with R. Gupta), U.S. Department of Agriculture, September 15, 1994-September 30, 1997 (\$85,000).
- “Stub Column Testing - Pilot Project,” Metal Stud Manufacturers Association, February 12, 1997-August 15, 1997 (\$4000 service and testing contract).
- “Vertical Testing of Composite Wall Panels Subject to Lateral Loadings,” Metal Lath/Steel Framing Association, February 23, 1996-July 31, 1997 (\$6,930 service and testing contract).
- “Vertical Testing of Composite Wall Panels Subject to Lateral Loadings,” Metal Stud Manufacturers Association, December 1, 1995-July 31, 1997 (\$11,550 service and testing contract).
- “Vertical Testing of Shaft Walls Subject to Lateral Loadings,” Knorr Steel Framing Systems, Inc., May 20, 1996-April 30, 1997 (\$4,620 service and testing contract).

- “Development of Seismic Rehabilitation Master Plan for the Oregon State University Campus,” Oregon State University, July 1, 1994-October 31, 1995 (\$21,256).
- “Static and Cyclic Testing of Cold-Formed Steel Connections,” Devco Engineering, Inc., March 1, 1994-September 30, 1994 (\$1600 service and testing contract).
- “Preliminary Seismic Analysis and Testing of Wood Connections,” (Co-PI with Rakesh Gupta), Oregon State University General Research Fund, November 1, 1993-June 30, 1994 (\$4,000).
- “Seismic Rehabilitation Cost-Benefit Study of Selected OSU Facilities,” Oregon State University, March 1, 1992-July 1, 1993 (\$29,210).
- “Seismic Risk Assessment for Student Life Facilities at OSU,” Oregon State University, March 1-August 1, 1992 (\$5,100).
- “Seismic Risk Assessment for Academic Facilities at OSU,” Oregon State University, July 1, 1991-February 29, 1992 (\$12,732).
- “Testing of Cold-Formed Steel Wall Stud Panels Subject to Lateral Loadings,” Metal Stud Manufacturer's Association, June 1-December 31, 1990 (\$10,685 + \$11,039 service and testing contract).

## **GRADUATE STUDENTS ADVISED**

### **PhD Dissertations**

Milan Vatovec	1996
Young-ki Lee	1999
Kasidit Chansawat	2003
Kraisorn Lucksiri	2012
William Kirkham	2013

### **Master of Science Theses**

Bohumil Kasal	1995
Scott Kent	1995
Leanne Heck	1997
Mark Kittel	1997
Zhong Li	1997
Mark Redlinger	1998
Shawn Freilinger	1998
Steven Trautwein	1998
Miles Waltz	1998
Tanarat Potisuk	2000
Da-ren Dung	2000
David McCurry	2000
Jeffrey Langlois	2002
Claudia Eiden	2003
Randall Scott	2003
Preston Baxter	2004
Peter Seaders	2004
Kevin White	2005
Michael Lewis	2008
Tiberiu Polocoser	2012
Kathryn Pfretzschner	2012
Brian Malone	2013
Kenton Alldritt	2013
Kristopher Walker	2015

Thanh Huynh	2016
Kristina Milaj	2016
Kyle Sullivan	2016 (expected)

**Master of Science Projects**

John Ferguson	1993
Hi-Kong Tan	1993
Guan Ch'ng	1993
Young-ki Lee	1995
Kanok Sucharitsanchai	1995
Kris Weerakul	1995
William Kirkham	1997
Nanthaphong Charoenmak	1998
Edward Tornberg	1998
Kasidit Chansawat	1998
Praneung Limkatanyoo	2000
Troy MacKenzie	2000
Dharadon Seamanontaprianya	2001
Hoon Choi	2002
Kraisorn Lucksiri	2002
Mathew Donahue	2003
Nathan Wallace	2007
Jignesh Vadodaria	2008
Jacob Ervin	2010

**OSU Honors College Projects**

Brenda Shonkwiler	2001
Sara Holm	2007
Jennifer Coe	2009
Levi Voigt	2011
Stephanie Stache	2013

**TEACHING**

**Courses Taught at Oregon State University**

CE 381	Structural Theory	CE 383	Design of Steel Structures
CE 480/580	Advanced Steel Design	CE 481/581	Reinforced Concrete I
CE 482/582	Wood Design	CE 489/589	Seismic Design
CE 533	Structural Stability	CE 534	Structural Dynamics
CEM 381	Structural Fundamentals	ENGR 211	Statics
ENGR 213	Strength of Materials		