MICHAEL P. WOLCOTT

Regents Professor
Louisiana-Pacific Distinguished Professor of Wood Materials and Engineering
Department of Civil and Environmental Engineering
Washington State University
Pullman, WA 99164

EDUCATION

Ph.D. Materials Engineering Science — August 1989
Virginia Polytechnic Institute & State University, Blacksburg, VA

M.S. Forestry — August 1985
University of Maine at Orono, Orono, ME

B.S. Wood Science — December 1982
University of Maine at Orono, Orono, ME

PROFESSIONAL WORK EXPERIENCE

Regents Professor — August 2012 to present
Washington State University
Pullman, WA

Director — August 2008 to present
Washington State University, Institute for Sustainable Design
Pullman, WA

Professor of Civil and Environmental Engineering — August 2004 to 2012
Washington State University, Dept. of Civil and Environmental Engineering
Pullman, WA

Associate Professor of Civil and Environmental Engineering — Jan. 1996 to August 2004
Washington State University, Dept. of Civil and Environmental Engineering
Pullman, WA

Research Director — Oct. 1998 to present
Washington State University, Wood Materials and Eng. Laboratory
Pullman, WA

Faculty — Jan. 2001 to present
Washington State University, Materials Science and Engineering Program
Pullman, WA

Interim Director — Jan. 1997 to June 1997
Washington State University, Wood Materials and Eng. Laboratory
Pullman, WA

Associate Professor of Wood Science — July 1995 to Jan. 1996
West Virginia University, Division of Forestry, Morgantown, WV

Assistant Professor of Wood Science — July 1989 to July 1995
West Virginia University, Division of Forestry, Morgantown, WV

HONORS

President, 2014-15, Society of Wood Science and Technology, Madison, WI. As the international professional society for wood science, SWST provides academic accreditation, international convention forums annually, and a leading journal for the profession. The position of President requires a 5-year commitment that includes two-preceding years as VP and President Elect, as well as two-years with Past-President duties.

Adjunct Professor, 2013-14, College of Agricultural Sciences, Department of Agricultural and Biological Engineering, The Pennsylvania State University, University Park, PA.

Regents Professor, Washington State University, 2012, the promotion honors the highest level of international distinction in the discipline that raises university standards through teaching, scholarship and public service. This rank is capped at 20 across the university.

Fellow, International Academy of Wood Science, 2012, meritorious recognition of wood scientists in evidence of high scientific standards

Leon Luck Most Effective Professor, 2009, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA.

Career Achievement Award, 2009, College of Natural Resources (Alumnus), Virginia Tech, Blacksburg, VA

Outstanding Teaching Faculty, 2007, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA.

Anjan Bose Outstanding Researcher Award, 2005, College of Engineering and Architecture, Washington State University, Pullman, WA.

Outstanding Research Faculty, 2004, College of Engineering and Architecture, Washington State University, Pullman, WA.

Outstanding Research Faculty, 2004/2005, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA.

Distinguished Alumnus, 2002, College of Agriculture and Forestry, University of Maine, Orono, ME.

Louisiana-Pacific Professorship of Wood Materials and Engineering, Endowed professorship for research in wood materials and engineering. Washington State University, 1998 to present.

Adjunct Professor, 1996, College of Wood Science, Nanjing Forestry University, Nanjing, China.

George Marra Award, 1995, Society of Wood Science and Technology (1st place, two awards annually for excellence in research).

Cahn Award, 1992, Cahn Instruments (awarded annually for research in dynamic contact angle analysis).

George Marra Award, 1991, Society of Wood Science and Technology (1st place, two awards annually for excellence in research).

Wood Award, 1990, Forest Products Research Society (2nd place, two awards annually for outstanding graduate student research).

PATENTS *(total of 6)*

Hurst, M.W., C. Qi, **M. Wolcott** and V. Yadama. 2013. Composite boards made with sorghum stalks and a thermoplastic binder and processes for making same. US Patent No. 20,130,089,700. Washington, DC: U.S. Patent and Trademark Office.

Dostal, D.F. and **M.P. Wolcott**. 2008. Low-density cellular wood plastic composite and process for formation. U.S. Patent No. 7,431,872. Washington, DC: U.S. Patent and Trademark Office.

Dostal, D.F. and **M.P. Wolcott**. 2007. Low-density cellular wood plastic composite and process for formation. Australia Patent Application No.2002259018. Brisbane, Australia. (accepted).

Dostal, D.F. and **M.P. Wolcott**. 2006. Low-density cellular wood plastic composite and process for formation. NZ Patent No.529062. Intellectual Property Office of New Zealand, Ministry of Economic Development, Lower Hutt, NZ.

Altheimer, E. and **M.P. Wolcott**. 2004. Method for forming an Arundo donax paper product. U.S. Patent No. 6,761,798 B2. Washington, DC: U.S. Patent and Trademark Office.

Whipkey, C.R., P.L. Bloomer, K. Wright and **M.P. Wolcott**. 1997. Portable bridge system. U.S. Patent No. 5,603,134. Washington, DC: U.S. Patent and Trademark Office.

KEYNOTE, FEATURED, AND INTERNATIONAL LECTURES *(total of 18)*

Wolcott, M.P. and R. Cavalieri. 2013. Wood to wing: Envisioning an aviation biofuels industry from forest residuals. *Featured Lecture*. OSU Starker Lecture Series, Corvallis, OR, April 11.

Wolcott, M.P. 2012. The Northwest Advanced Renewables Alliance: A supply chain to aviation biofuels and environmentally preferred products. *Invited Speaker*. Pacific West Biomass Conference & Trade Show, San Francisco, CA, January 17.

Wolcott, M.P. and M.A. Gonin. 2010. Structural design for sustainable construction and disaster mitigation. *Invited Organizer*. United Nations Economic Commission for Europe and SWST, Palais des Nations, Geneva, Switzerland, October 11-15.

Wolcott, M.P. 2009. Innovative sustainable design programs for engineers. *Invited Lecturer*. Microsoft Green, Microsoft Campus, Redmond, WA, July 21.

Wolcott, M.P. 2009. Natural fiber composites to foster sustainable building goals. *Invited Session Keynote*. ANTEC@NPE 2009, Chicago, IL, June 23.

Wolcott, M.P. 2009. The future of design: Sustainability. *Keynote Speaker*. 60th Annual Road Builders' Clinic, Coeur d'Alene, ID, March 3.

Wolcott, M.P. 2008. Natural fiber thermoplastic composites: The state of the future. *Keynote Speaker*. 9th Pacific Rim Bio-Based Composites Symposium, Rotorua, New Zealand, November 5-8.

Wolcott, M.P. 2008. The role of wood in sustainable building standards. *Featured Speaker*. Life Cycle Workshop of the 9th Pacific Rim Bio-Based Composites Symposium, Rotorua, New Zealand, November 5-8.

Wolcott, M.P. 2008. Strategies for tomorrow: Re-engineering for a sustainable built environment. *Featured Lecture*. WSU Innovators Lecture Series, Seattle, WA, October 9.

Wolcott, M.P. 2007. Developing a nanotechnology program for the US forest products industry. *Industry Sector Keynote Presentation*. NanoQuebec. Montreal, Canada, February 7.

Wolcott, M.P. and P.M. Smith. 2005. Wood-plastic composites in emerging products and markets. *Featured Closing Presentation.* 8th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 23-25.

Wolcott, M.P. 2004. Opportunities and challenges for woodfibre-plastic composites in structural applications. *Keynote Presentation.* Progress in Woodfibre-Plastic Composites Conference, Toronto, Canada, May 10-11.

Wolcott, M.P. 2003. Production methods and platforms for wood plastics. *Featured Speaker.* Non-Wood Substitutes for Solid Wood Products Conference, Melbourne, Australia, October 20-22.

Wolcott, M.P. 2002. Polymer platforms for the next generation of wood composites. *Keynote Presentation.* The 6th Pacific Rim Bio-Based Composites Symposium & Workshop on the Chemical Modification of Cellulosics, Portland, OR.

Wolcott, M.P. 2001. Wood-plastic composite technologies. *Featured Speaker*. Forest Industries Engineering Association (FIEA) Conference, Nelson, New Zealand.

Wolcott, M.P. 2001. Wood-plastic composite technologies. University of Auckland; Carter Holt Harvey National Headquarters, and Fletcher Challenge National Headquarters (New Zealand's two largest forest products firms) in Auckland, NZ; Forest Research Institute, Rotorua, NZ.

Wolcott, M.P. 2000. Development of wood-plastic composites in North America. *Featured Plenary Presentation and Discussion*. Ibero-American Forest Products Conference. Univ. of Bio-Bio, Conception, Chile.

Wolcott, M.P. 1996. Current consolidation theories for wood strand composites. *Invited Lecturer*, Nanjing University. Nanjing, China.

REFEREED JOURNAL ARTICLES*, **, *** *(total of 102 with > 3700 citations – h-index 34)*

Google Scholar Report: http://goo.gl/qvGj4

Chen, F.** and **M.P. Wolcott**. 2015. Polyethylene/paraffin binary composites for phase change material energy storage in building: A morphology, thermal properties, and paraffin leakage study. Solar Energy Materials and Solar Cells. DOI: 10.1016/j.solmat.2015.01.010. 137:79-85.

Ou, R.**, Y. Xie, Q. Wang, S. Sui, and **M.P. Wolcott**. 2015. Material pocket dynamic mechanical analysis: A novel tool to study thermal transition in wood fibers plasticized by an ionic liquid (IL). Holzforschung – International Journal of the Biology, Chemistry, Physics and Technology of Wood. DOI: 10.1515/hf-2014-0080. 69(2):223-232.

Qi, C.**, V. Yadama, K. Guo, and **M.P. Wolcott**. 2015. Preparation and properties of oriented sorghum-thermoplastic composites using flat hot-pressing technology. Journal of Reinforced Plastics and Composites. DOI: 10.1177/0731684415591066.

Qi, C.**, V. Yadama, K. Guo, and **M.P. Wolcott**. 2015. Thermal stability evaluation of sweet sorghum fiber and degradation simulation during hot pressing of sweet sorghum-thermoplastic composite panels. Industrial Crops and Products. DOI: 10.1016/j.indcrop.2015.02.050. 69:335-343.

* Undergraduate Student
** Graduate Student
*** Post-Doctoral Researcher

Yadama, V. and **M.P. Wolcott.** 2015. Application of fiber undulation model to predict oriented strand composite elastic properties. Journal of Renewable Materials. DOI: 10.7569/JRM.2015.634103. 3(3):216-223.

Alam, A., L. Haselbach, G. DeRooy, C. Poor and **M. Wolcott**. 2014. Green rating integration platform – a decision making tool for multi-modal facilities: Credit harmonization and a sustainable water & material practices case study. Journal of Green Building. 9(4):161-174.

Chen, F.** and **M.P. Wolcott**. 2014. Miscibility studies of paraffin/polyethylene blends as form-stable phase change materials. European Polymer Journal. DOI: 10.1016/j.eurpolymj.2013.09.027. 52:44-52.

Martinkus, N.**, W.P. Shi, N. Lovrich, J. Pierce, P. Smith, and M. Wolcott. 2014. Integrating biogeophysical and social assets into biomass-to-biofuel supply chain siting decisions. Biomass and Bioenergy. DOI: 10.1016/j.biombioe.2014.04.014. 66:410-418.

Ou, R.**, Q. Wang, **M.P. Wolcott**, S. Sui, and Y. Xie, 2014. Rheological behavior and mechanical properties of wood flour/high density polyethylene blends: Effects of esterification of wood with citric acid. Polymer Composites. DOI: 10.1002/pc.23212.

Ou, R.**, Q. Wang, **M.P. Wolcott**, S. Sui, Y. Xie, and Y. Song. 2014. Effects of chemical modification of wood flour on the rheological properties of high-density polyethylene blends. Journal Applied Polymer Science. DOI: 10.1002/app.41200. 131(23).

Ou, R.**, Y. Xie, Q. Wang, S. Sui, and **M.P. Wolcott**. 2014. Effects of ionic liquid on the rheological properties of wood flour/high density polyethylene composites. Composites: Part A. DOI: 10.1016/j.compositesa.2014.02.017. 61:134-140.

Ou, R.**, Y. Xie, **M.P. Wolcott,** S. Sui, and Q. Wang. 2014. Morphology, mechanical properties, and dimensional stability of wood particle/high density polyethylene composites: Effect of removal of wood cell wall composition. Materials & Design. DOI: 10.1016/j.matdes.2014.02.018. 58:339-345.

Ou, R.**, Y. Xie, **M.P. Wolcott,** F. Yuan, and Q. Wang. 2014. Effect of wood cell wall composition on the rheological properties of wood particle/high density polyethylene composites. Composites Science and Technology. DOI: 10.1016/j.compscitech.2014.01.001. 93:68-75.

Ou, R.**, Y. Xie, Q. Wang, S. Sui, and **M.P. Wolcott**. 2014. Thermal, crystallization, and dynamic rheological behavior of wood particle/HDPE composites: Effect of removal of wood cell wall composition. Journal Applied Polymer Science. DOI: 10.1002/app.40331. 131(11).

Ou, R.**, Y. Xie, Q. Wang, S. Sui, and **M.P. Wolcott**. 2014. Thermoplastic deformation of poplar wood plasticized by ionic liquids measured by a nonisothermal compression technique. Holzforschung – International Journal of the Biology, Chemistry, Physics and Technology of Wood. DOI: 10.1515/hf-2013-0136. 68(5):555-566.

Qin, J., H. Liu, P. Zhang, **M.P. Wolcott,** and J. Zhang. 2014. Use of eugenol and rosin as feedstocks for biobased epoxy resins and study of curing and performance properties. Polymer International. DOI: 10.1002/pi.4588. 63(4):760-765.

Qin, J., **M. Wolcott,** and J. Zhang. 2014. Use of polycarboxylic acid derived from partially depolymerized lignin as a curing agent for epoxy application. ACS Sustainable Chemistry & Engineering. DOI: 10.1021/sc400227v. 2(2):188-193.

Xin, J., P. Zhang, **M.P. Wolcott**, X. Zhang, and J. Zhang. 2014. Partial depolymerization of enzymolysis lignin via mild hydrogenolysis over Raney Nickel. Bioresource Technology. DOI: 10.1016/j.biortech.2013.12.092. 155:422-426.

Zhang, J., A. Laguna*, C. Clemons, **M.P. Wolcott**, R. Gleisner, J.Y. Zhu, and X. Zhang. 2014. Effect of hot-pressing temperature on the subsequent enzymatic saccharification and fermentation performance of SPORL pretreated forest biomass. BioEnerg. Res. DOI: 10.1007/s12155-014-9530-9.

Anderson, S.**, J. Zhang, and **M.P. Wolcott**. 2013. Effect of interfacial modifiers on mechanical and physical properties of the PHB composite with high wood flour content. Journal of Polymers and the Environment. 21(3)631-639.

Qi, C.**, V. Yadama, K. Guo, and **M.P. Wolcott**. 2013. Thermal conductivity of sorghum and sorghum-thermoplastic composite panels. Industrial Crops and Products. DOI: 10.1016/j.indcrop.2013.01.011. 45:455-460.

Ten, E.**, L. Jiang, and **M.P. Wolcott**. 2013. Preparation and properties of aligned poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate)/cellulose nanowhiskers composites. Carbohydrate Polymers. DOI: 10.1016/j.carbpol.2012.09.033. 92(1):206-213.

Thompson, M.**, L. Haselbach, C. Poor, and **M. Wolcott**. 2013. Integrating green rating systems: A case study for ferry terminals. Journal of Green Building. DOI: 10.3992/jgb.8.1.136. 8(1):136-150.

Yemele, M.C.N., A. Koubaa, A. Cloutier, P. Soulounganga, T. Stevanovic, and **M.P. Wolcott**. 2013. Effects of hot water treatment of raw bark, coupling agent, and lubricants on properties of bark/HDPE composites. Industrial Crops and Products. DOI: 10.1016/j.indcrop.2012.05.012. (42):50-56.

Ten, E.**, L. Jiang, and **M.P. Wolcott**. 2012. Crystallization kinetics of poly(3-hydroxybutyrate-co-3-hydroxyvalerate)/cellulose nanowhiskers composites. Carbohydrate Polymers. DOI: 10.1016/j.carbpol.2012.05.076. 90(1):541-550.

Ten, E.**, D.F. Bahr, B. Li, L. Jiang, and **M.P. Wolcott**. 2012. Effects of cellulose nanowhiskers on mechanical, dielectric, and rheological properties of poly(3-hydroxybutyrate-co-3-hydroxyvalerate)/cellulose nanowhiskers composites. Industrial & Engineering Chemistry Research. 51(7):2941-2951.

Migneault, S., A. Koubaa, F. Erchiqui, A. Chaalla, K.R. Englund, and **M.P. Wolcott**. 2011. Application of micromechanical models to tensile properties of wood–plastic composites. Wood Science and Technology. DOI: 10.1007/s00226-010-0351-5. 45(3):521-532.

Wang, J.W.**, M.P.G. Laborie, and **M.P. Wolcott.** 2011. Correlation of mechanical and chemical cure development for phenol-formaldehyde resin bonded wood joints. Thermochimica Acta. 513(1-2):20-25.

Wolcott, M., S. Brown, M. King**, D. Ascher-Barnstone, T. Beyreuther, and K. Olsen. 2011. A model for faculty, student, and practitioner development in sustainability engineering through an integrated design experience. ASCE Journal of Professional Issues in Engineering Education and Practice. DOI: 10.1061/(ASCE)EI.1943-5541.0000058. 137(2):94-101.

Gacitua, W.**, D. Bahr, and **M. Wolcott.** 2010. Damage of the cell wall during extrusion and injection molding of wood plastic composites. Composites Part A. Applied Science and Manufacturing. 41(10):1454-1460.

Jiang, L.***, F. Chen**, J. Qian**, J.J. Huang, **M. Wolcott,** L.S. Liu, and J. Zhang. 2010. Reinforcing and toughening effects of bamboo pulp fiber on Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) fiber composites. Industrial & Engineering Chemistry Research. 49(2):572-577.

Ten, E.**, J. Turtle*, D. Bahr, L. Jiang***, and **M. Wolcott**. 2010. Thermal and mechanical properties of poly(3-hydroxybutyrate-co-3-hydroxyvalerate)/cellulose nanowhiskers composites. Polymer. 51(12):2652-2660.

Yang, H.S.***, P. Qiao, and **M.P. Wolcott**. 2010. Flexural fatigue and reliability analysis of wood flour/high-density polyethylene composites. Journal of Reinforced Plastics and Composites. 29(9):1295-1310.

Yang, H.S.***, P. Qiao, and **M.P. Wolcott**. 2010. Fatigue characterization and reliability analysis of wood flour filled polypropylene composites. Polymer Composites. 31(4):553-560.

Yemele, M.C.N., A. Koubaa, A. Cloutier, P. Souloungangа, and **M. Wolcott**. 2010. Effect of bark fibre content and size on the mechanical properties of bark/HDPE composites. Composites Part A. Applied Science and Manufacturing. 41(1):131-137.

Gacitua, W.** and **M. Wolcott.** 2009. Morphology of wood species affecting wood-thermoplastic interaction: microstructure and mechanical adhesion. Maderas-Ciencia Y Tecnologia. 11(3):217-231.

Harper,D.P.**, **M.P. Wolcott**, and M.P.G. Laborie. 2009. The impact of polypropylene-graft-maleic anhydride on the crystallization and dynamic mechanical properties of isotactic polypropylene. Journal of Applied Polymer Science. 111(2):753-758.

Migneault, S., A. Koubaa, F. Erchiqui, A. Chaala, K.R. Englund, C. Krause, and **M.P. Wolcott**. 2009. Effects of processing method and fiber size on the structure and properties of wood-plastic composites. Composites Part A. Applied Science and Manufacturing. 40(1):80-85.

Schildmeyer, A.J.**, **M.P. Wolcott**, and D.A. Bender. 2009. Investigation of the temperature-dependent mechanical behavior of a polypropylene-pine composite. Journal of Materials in Civil Engineering. 21(9):460-466.

Wang, J.W.**, M.P.G. Laborie, and **M.P. Wolcott.** 2009. Kinetic analysis of phenol-formaldehyde bonded wood joints with dynamical mechanical analysis. Thermochimica Acta. 491(1-2):58-62.

Coats, E.R.**, F.J. Loge, **M.P. Wolcott**, K. Englund, and A.G. McDonald. 2008. Production of natural fiber reinforced thermoplastic composites through the use of polyhydroxybutyrate-rich biomass. Bioresource Technology. (99)7:2680-2686.

Fabiyi, J.S.**, A.G. McDonald, **M.P. Wolcott**, and P.R. Griffiths. 2008. Wood plastic composites weathering: visual appearance and chemical changes. Polymer Degradation and Stability. 93(8):1405-1414.

Jiang, L.***, E. Morelius*, J. Zhang, **M. Wolcott**, and J. Holbery. 2008. Study of the poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate)/cellulose nanowhisker composites prepared by solution casting and melt processing. Journal of Composite Materials. 42(24):2629-2645.

Jiang, L.***, J. Huang, J. Qian**, F. Chen**, J. Zhang, **M.P. Wolcott,** and Y. Zhu. 2008. Study of poly(3-hydroxybutyrate-Co-3-hydroxyvalerate) (PHBV) / bamboo pulp fiber composites: effects of nucleation agent and compatibilizer. Journal of Polymers and the Environment. 16:83-93.

Migneault, S., A. Koubaa, F. Erchiqui, A. Chaala, K. Englund, C. Krause, and **M. Wolcott**. 2008. Effect of fiber length on processing and properties of extruded wood-fiber/ HDPE composites. Journal of Applied Polymer Science. 110(2):1085-1092.

Chowdhury, M.J.A.*** and **M.P. Wolcott**. 2007. Compatibilizer selection to improve mechanical and moisture properties of extruded wood-HDPE composites. Forest Products Journal. 57(9):46-53.

Coats, E.R.**, F.J. Loge, **M.P. Wolcott**, K. Englund, and A.G. McDonald. 2007. Synthesis of polyhydroxyalkanoates in municipal wastewater treatment. Water Environment Research. 79(12):2396-2403.

Coats, E.R.**, F.J. Loge, W.A. Smith, D.N. Thompson, and **M.P. Wolcott**. 2007. Functional stability of a mixed microbial consortium producing PHA from waste carbon sources. Applied Biochemistry and Biotechnology. 137:909-925.

Jiang, L.***, J. Zhang, and **M.P. Wolcott**. 2007. Comparison of polylactide/nano-sized calcium carbonate and polylactide/montmorillonite composites: reinforcing effects and toughening mechanisms. Polymer. 48(26):7632-7644.

Jiang, L.***, **M.P. Wolcott**, J. Zhang, and K. Englund. 2007. Flexural properties of surface reinforced wood/plastic deck board. Polymer Engineering and Science. 47(3):281-288.

Wang, J.W.**, M.P.G. Laborie, and **M.P. Wolcott**. 2007. Comparison of model-fitting kinetics for predicting the cure behavior of commercial phenol-formaldehyde resins. Journal of Applied Polymer Science. 105(3):1289-1296.

Wang, J.W.**, M.P.G. Laborie, and **M.P. Wolcott**. 2007. Application of beam mechanics to sensing the cure development of wood-phenolic joints by dynamic mechanical analysis. Thermochimica acta. 465(1-2):18-24.

Yadama, V.**, **M.P. Wolcott**, and D.G. Pollock. 2007. Out-of-plane strand deviation in oriented strand composites. Wood and Fiber Science. 39(4):603-613.

Yang, H.S.***, **M.P. Wolcott**, H.S. Kim, S. Kim, and H.J. Kim. 2007. Effect of different compatibilizing agents on the mechanical properties of lignocellulosic material filled polyethylene bio-composites. Composite Structures. 79(3):369-375.

Harper, D.P.** and **M.P. Wolcott**. 2006. Chemical imaging of wood-polypropylene composites. Applied Spectroscopy. 60(8):898-905.

Jiang, L.***, **M.P. Wolcott**, and J. Zhang. 2006. Study of biodegradable polylactide/poly(butylene adipate-co-terephthalate) blends. Biomacromolecules. 7(1):199-207.

Li, T.Q.*** and **M.P. Wolcott**. 2006. Rheology of wood plastics melt: 2. Effects of lubricating systems in HDPE/maple composites. Polymer Engineering and Science. 46(4):464-473.

Li, T.Q.*** and **M.P. Wolcott**. 2006. Rheology of wood plastics melt: 3. Non linear nature of the flow. Polymer Engineering and Science. 46(1):114-121.

Schirp, A.***, F.J. Loge, K.R. Englund, **M.P. Wolcott**, J.R. Hess, T.P. Houghton, J.A. Lacey, and D.N. Thompson. 2006. Pilot-scale production and material properties of extruded straw-plastic composites based on untreated and fungal-treated wheat straw. Forest Products Journal. 56(10):90-96.

Schirp, A.***, F. Loge, S. Aust, P. Swaner*, G. Turner, and **M.P. Wolcott**. 2006. Production and characterization of natural fiber reinforced thermoplastic composites using wheat straw modified with the fungus *Pleurotus ostreatus*. Journal of Applied Polymer Science. 102(6):5191-5201.

Schirp, A.*** and **M.P. Wolcott.** 2006. Fungal degradation of wood-plastic composites and evaluation using dynamic mechanical analysis. Journal of Applied Polymer Science. 99(6):3138-3146.

Smith, P.M. and **M.P. Wolcott**. 2006. Opportunities for wood/natural fiber-plastic composites in residential and industrial applications. Forest Products Journal. 56(3):4-11.

Yadama, V.**, **M.P. Wolcott,** and L.V. Smith. 2006. Elastic properties of wood-strand composites with undulating strands. Composites Part A. Applied Science and Manufacturing. 37(3):385-392.

Yadama, V.** and **M.P. Wolcott**. 2006. Elastic properties of hot-pressed aspen strands. Wood and Fiber Science. 38(4):742-750.

Yang, H.S.***, **M.P. Wolcott**, H.S. Kim, S. Kim, and H.J. Kim. 2006. Properties of lignocellulosic material filled polypropylene bio-composites made with different manufacturing processes. Polymer Testing. 25(5):668-676.

Englund, K.R.** and **M.P. Wolcott**. 2005. Friction of nonwoven wood-polypropylene fiber mats on heated steel platens. Journal of Thermoplastic Composite Materials. 18(2):95-105.

Li, T.Q.*** and **M.P. Wolcott**. 2005. Rheology of wood plastics melt: Part 1. Capillary rheometry of HDPE filled with maple. Polymer Engineering and Science. 45(4):549-559.

Schirp, A.*** and **M.P. Wolcott**. 2005. Influence of fungal decay and moisture absorption on mechanical properties of extruded wood-plastic composites. Wood and Fiber Science. 37(4):643-652.

Wang, J.W.**, M.P.G. Laborie, and **M.P. Wolcott**. 2005. Comparison of model-free kinetic methods for modeling the cure kinetics of commercial phenol-formaldehyde resins. Thermochimica Acta. 439(1-2)68-73.

Yang, H.S.***, **M.P. Wolcott**, H.S. Kim, and H.J. Kim. 2005. Thermal properties of lignocellulosic filler-thermoplastic polymer bio-composites. Journal of Thermal Analysis and Calorimetry. 82(1):157-160.

Englund, K.R.**, **M.P. Wolcott,** and J.C. Hermanson. 2004. The compression of wood/thermoplastic fiber mats during consolidation. Composites Part A. Applied Science and Manufacturing. 35(2):273-279.

Harper, D.P.** and **M.P. Wolcott**. 2004. Interaction between coupling agent and lubricants in wood-polypropylene composites. Composites Part A. Applied Science and Manufacturing. 35(3):385-394.

Houghton, T.P., D.N. Thompson, J.R. Hess, J.A. Lacey, **M.P. Wolcott**, A. Schirp***, K. Englund***, D. Dostal, and F. Loge. 2004. Fungal upgrading of wheat straw for straw-thermoplastics production. Applied Biochemistry and Biotechnology. 113:71-93.

Li, T.Q.*** and **M.P. Wolcott**. 2004. Rheology of HDPE-wood composites I. Steady state shear and extensional flow. Composites Part A. Applied Science and Manufacturing. 35(3):303-311.

Wang, X.P., R.J. Ross, D.W. Green, B. Brashaw, K. Englund**, and **M. Wolcott**. 2004. Stress wave sorting of red maple logs for structural quality. Wood Science and Technology. 37(6):531-537.

Tucker, B.J.**, D.A. Bender, D.G. Pollock, and **M.P. Wolcott**. 2003. Ultrasonic plate wave evaluation of natural fiber composite panels. Wood and Fiber Science. 35(2):266-281.

Wolcott, M.P. and E.L. Shutler**. 2003. Temperature and moisture influence on compression-recovery behavior of wood. Wood and Fiber Science. 35(4):540-551.

Wolcott, M.P. 2003. Formulation and process development of flat-pressed wood polyethylene composites. Forest Products Journal. 53(9):25-32.

Pendleton, D.E., T.A. Hofford, T. Adcock***, B. Woodward, and **M.P. Wolcott**. 2002. Durability of an extruded HDPE/wood composite. Forest Products Journal. 52(6):21-27.

Peters, J.J**, D.A. Bender, **M.P. Wolcott**, and J.D. Johnson. 2002. Selected properties of hybrid poplar clear wood and composite panels. Forest Products Journal. 52(5):45-54.

Harper, D.P.**, **M.P. Wolcott**, and T.G. Rials. 2001. Evaluation of cure kinetics of the wood/pMDI bondline. Int. Journal of Adhesion and Adhesives. 21(2):137-144.

Harper, D. P.**, **M.P. Wolcott**, and T.G. Rials. 2001. Evaluating cure of a pMDI-wood bondline using spectroscopic, calorimetric, and mechanical methods. Journal of Adhesion. 76(1):55-74.

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Cavalieri, R. and **M.P. Wolcott.** 2014. Energy independence for a sustainable future: Envisioning an aviation biofuels Industry from forest residuals. Great Decisions Lecture Series, Whitworth University, Spokane, WA, April 24.

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Wolcott, M.P. 2009. Trends influencing sustainable building standards. Society of American Military Engineers Joint Engineer Training Conference & Expo, Salt Lake City, UT, May 12–15.

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Kaboorani, A., A. Cloutier, and **M.P. Wolcott**. 2007. Effects of water absorption on the mechanical properties of HDPE/wood composites. 9th International Conference on Wood & Biofiber Plastic Composites, Madison, WI, May 21-23.

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Anderson, S., J. Zhang, and **M.P. Wolcott**. 2006. Study of biocomposites of wood flour and poly(hydroxyalkanoates): performance enhancement. 2006 AiChE Annual Meeting, San Francisco, CA, November 12-17.

DuChateau, K., J.D. Dolan, and **M. Wolcott**. 2006. Performance of bracing panel wall segments utilizing wood plastic composite sill plates. 9th World Conference on Timber Engineering 2006, WCTE 2006, Portland, OR, August 6-10.

Hummer, T., J.D. Dolan, and **M. Wolcott**. 2006. Tension perpendicular to grain strength of wood, laminated veneer lumber, and a wood plastic composite. 9th World Conference on Timber Engineering 2006, WCTE 2006, Portland, OR, August 6-10.

Gacitua E., W. and **M.P. Wolcott**. 2006. Morphology of wood species affecting wood-plastic interaction. Part 1: Mechanical interlocking. Forest Products Society 60th International Convention, Newport Beach, CA, June 25–28.

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Coats, E.R., W.A. Smith, D.N. Thompson, F.J. Loge, and **M.P. Wolcott**. 2006. Microbial community changes in a mixed microbial consortia producing PHA from waste carbon sources. 28th Symposium on Biotechnology for Fuels and Chemicals, Nashville, TN, April 30-May 3.

Wolcott, M.P. 2006. The evolution and future of renewable composite materials. Anjan Bose Outstanding Researcher Award Lecture. Pullman, WA, April 27.

Wolcott, M.P. 2006. Opportunities for nanotechnology in advancing the wood products revolution. International Conference on Nanotechnology in the Forest Products Industry. TAPPI, Atlanta, GA, April 26-28.

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Loge, F.J., E.R. Coats, **M.P. Wolcott,** and A. McDonald. 2005. Poop to plastic: Commercial production of polyhydroxyalkanoates in municipal and industrial wastewater treatment. 2005 AiChE Annual Meeting, Cincinnati, OH, October 30 - November 4.

Buehlmann, U., O. Ndiapi, D. Saloni, R.L. Lemaster, and **M.P. Wolcott**. 2005. Influence of woodfiber-plastic material composition on machining and abrasion performance. 8th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 23-25.

Fabiyi, J.S., A.G. McDonald, **M.P. Wolcott,** and K. Englund. 2005. Chemical changes that occur during the weathering of wood-plastic composites. 8th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 23-25.

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Harper, D.P. and **M.P. Wolcott**. 2005. Chemical imaging of wood-polypropylene composites. 8th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 23-25.

Wolcott, M.P., P.M. Smith, and J.C. Hermanson. 2005. Opportunities and challenges for wood-plastic composites in emerging product areas. 8th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 23-25.

Smith, P.M. and **M.P. Wolcott**. 2005. Woodfiber-plastic composite markets and applications. 39th International Wood Composites Symposium. Washington State University, Pullman, WA, April 4-7.

Englund, K. and **M.P. Wolcott**. 2004. Wheat straw residues as a fiber source for thermoplastic composites. Progress in Woodfibre-Plastic Composites Conference, Toronto, Canada, May 10-11.

Li, T.Q. and **M.P. Wolcott**. 2004. Melt rheology of HDPE-woodfiber composites with matrix of different molecular weight. Progress in Woodfibre-Plastic Composites Conference, Toronto, Canada, May 10-11.

Schirp, A., F. Loge, and **M.P. Wolcott**. 2004. Comparison of three laboratory methods for evaluating fungal decay of WPC's. Progress in Woodfibre-Plastic Composites Conference, Toronto, Canada, May 10-11.

Wolcott, M.P. and P.M. Smith. 2004. Opportunities and challenges for wood-plastic composites in structural applications. Progress in Woodfibre-Plastic Composites Conference, Toronto, Canada, May 10-11.

Wolcott, M.P. 2003. Factors influencing the commercialization of navy wood-plastic composites. The Global Outlook for Natural Fiber & Wood Composites Conference, New Orleans, LA, December 3-5.

Wolcott, M.P., K. Englund, D.P. Harper, and T.Q. Li. 2003. Influence of additives on the viscoelastic and rheological behavior of wood-polypropylene composites. AIChE Annual Meeting, San Francisco, CA, November 16-21.

Coats, E.R., K. Englund, F. Loge, and **M.P. Wolcott.** 2003. Wood fiber-PHB composites. AIChE Annual Meeting, San Francisco, CA, November 16-21.

Wolcott, M.P. 2003. Engineered wood-plastic composites. Innovation for Survival PNW Forest Sector, Puyallup, WA, November 18.

Wolcott, M.P. 2003. Recent progress in wood-polymer composite materials. Forest Products Priorities for the Future (NPC-NAPFSC Meeting). USDA Forest Products Laboratory, Madison, WI, October 28.

Wolcott, M.P. 2003. Production methods and platforms for wood plastics. Non-Wood Substitutes for Solid Wood Products Conference, Melbourne, Australia, October 20-22.

Yadama, V. and **M.P. Wolcott**. 2003. Characterization of out-of-plane strand orientation and its influence on mechanical properties. 57th Annual Meeting of the Forest Products Society, Bellevue, WA, June 23-25.

Wolcott, M.P. 2003. Organizing for bioproducts research: The northwest bioproducts research institute. 46th Annual Meeting Society of Wood Science and Technology, Bellevue, WA, June 22.

Wolcott, M.P. and T.Q. Li. 2003. A rheology study of HDPE-Maple composites. 7th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 19-20.

Bender, D.A. and **M.P. Wolcott.** 2003. Experiences with development and commercialization of engineered wood-plastic composites. 7th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 19-20.

Harper, D.P., **M.P. Wolcott,** and K. Englund. 2003. Molecular relaxations contributing to phase transition creep in thermoplastic wood composites. 7th International Conference on Woodfiber-Plastic Composites. Madison, WI, May 19-20.

Wolcott, M.P. 2002. The latest developments on wood-plastic technology. 2002 International Inorganic-Bonded Wood and Fiber Composites Conference, Sun Valley, ID, September 23-25.

Harper, D.P. and **M.P. Wolcott.** 2002. Interactions between coupling agents and lubricants in wood-polypropylene composites. AIChE, Indianapolis, IN.

Wolcott, M.P. and T.G. Rials. 2002. Thermal analysis of wood-polymer systems. 56th Annual Meeting of the Forest Products Society, Madison, WI, June 23-26.

Harper, D.P., **M.P. Wolcott,** and T.G. Rials. 2002. Cure kinetics of pMDI. 56th Annual Meeting of the Forest Products Society, Madison, WI, June 23-26.

Wolcott, M.P. 2002. Rheology of wood-plastic melts with applications to formulation and die design. Progress in Woodfibre-Plastic Composites Conference, Toronto, Canada, May 23-24.

Wolcott, M.P. and D.G. Pollock. 2002. Engineered lumber products and requirements from Inland Empire Species. Small Diameter Timber Symposium, Spokane, WA, February 25-27.

Wolcott, M.P., D.I. McLean, D.E. Pendleton, and P.M. Smith. 2001. Use of wood plastic composites in naval waterfront structures. The Global Outlook for Natural Fiber & Advanced Wood Composites Conference, Orlando, FL, December 3-5.

Wolcott, M.P. 2001. Invited lectures on status of wood-plastic composites. Dept of Wood Science and Forest Products. Virginia Polytechnic Institute and State University. Blacksburg, VA. November 28-29.

Wolcott, M.P. 2001. Issues and opportunities facing wood-based materials in marine applications. 55th Annual Meeting of the Forest Products Society, Baltimore, MD. June 24-27.

Wolcott, M.P., T. Adcock, and S.M. Peyer. 2001. Development of extruded wood-plastic composite materials. 55th Annual Meeting of the Forest Products Society, Baltimore, MD. June 24-27.

Wolcott, M.P., P.M. Smith, and G.M. Carter. 2001. Recycled plastic and composite lumber. 2001. Forest Industries Engineering Association (FIEA) Conference, Nelson, New Zealand. May 31.

Wolcott, M.P., P.M. Smith, and G.M. Carter. 2001. Recycled plastic and composite lumber. University of Auckland; Carter Holt Harvey National Headquarters, and Fletcher Challenge National Headquarters (New Zealand's two largest forest products firms) in Auckland, NZ; Forest Research Institute, Rotorua, NZ. May 27-29.

Bender, D.A. and **M.P. Wolcott**. 2001. Wood plastic composites from small diameter wood. ASCE/SEI Structures Congress & Exposition, Washington, D.C. May 21-23.

Wolcott, M.P., M.J.A Chowdhury, R.B. Heath, and T.G. Rials. 2001. Coupling agent/lubricant interactions in commercial woodfiber-plastic composite formulations. 6th International Conference on Woodfiber-Plastic Composites, Madison, WI. May 15-16.

Lee, S.Y., T.M. Gorman, and **M.P. Wolcott**. 2001. Crystallization morphology of the semicrystalline polymer. 6th International Conference on Woodfiber-Plastic Composites, Madison, WI. May 15-16.

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Wolcott, M.P. 2001. Manufactured wood products: Future for OSB and MDF. Interior Alaska Forest Products Conference, Fairbanks, AK. May 7-9.

Cofer, W.F., D.I. McLean, and **M.P. Wolcott.** 2001. Structural evaluation of engineered wood composites for naval waterfront facilities. ASCE/PIANC PORTS 01 Conference, Norfolk, VA. April 29 - May 2.

Wolcott, M.P. 2001. Wood-plastic composite extrusion. Plastics Encounters, Los Angeles, CA. April 9-10.

Linville, J.D. and **M.P. Wolcott.** 2001. Controlling Thickness Swell in Oriented Strand Composites. 35th International Particleboard/Composite Materials Symposium, Pullman, WA. April 3-5.

Wolcott, M.P. 2001. Interface and commercial developments in wood-plastic composites. Honeywell Corp., Specialty Polymers Group, Morristown, NJ. January 30-31.

Wolcott, M.P. and T. Adcock. 2000. New advances in wood-fiber polymer formulations. Wood-Plastic Conference sponsored by Plastics Technology and Polymer Process Communications, Baltimore, MD. Dec. 5-6.

Wolcott, M.P., A. Bozo, and J. Linville. 2000. Spatial variation in wood composites. Ibero-American Forest Products Conference. Univ. of Bio-Bio, Conception, Chile.

Harper, D.P., **M.P. Wolcott**, and T.G. Rials. 2000. Assessment of pMDI cure in saturated steam environments. Wood Adhesives 2000. South Lake Tahoe, NV. June 22-23.

Wolcott, M.P. 2000. Engineered wood composites for naval waterfront facilities. Progress in Woodfibre-Plastic Composites Conference sponsored by Materials and Manufacturing Ontario and the University of Toronto, Toronto, Canada. May 25-26.

Adcock, T., **M.P. Wolcott**, and J.C. Hermanson. 1999. Simplex analysis of a multi-component wood-plastic system in relation to material properties. 5th International Conference on Woodfiber-Plastic Composites, Madison, WI.

Adcock, T., **M.P. Wolcott**, and M.T. Lentz. 1999. The use of hybrid resin systems for strawboard manufacture. Eastern Canadian Section Meeting of the Forest Products Society, Winnipeg, Manitoba.

Adcock, T., **M.P. Wolcott**, and S.M. Peyer. 1999. Urea formaldehyde/diphenylmethane diisocyanate copolymer adhesives: Possible use as an adhesive system for straw based particleboard. 3rd European Panel Products Symposium, Llandudno, Wales. October 6-8.

Cofer, W.F., D.G. Pollock, **M.P. Wolcott**, Y. Du, and V. Yadama. 1999. Modeling non-linear connection performance in wood structures. Partnership for Natural Disaster Reduction, University Research Consortium (URC) Collaborator's Meeting, Idaho National Engineering and Environmental Laboratory (INEEL), Idaho Falls, ID.

Hermanson, J.C, T. Adcock, and **M.P. Wolcott**. 1999. Material modeling of wood-plastic composites. Annual Meeting of the Society of Experimental Mechanics, Cincinnati, OH.

Peyer, S.M., **M.P. Wolcott**, and D.J. Fenoglio. 1999. Treating aspen flakes with polycarboxylic acid resin to improve dimensional stability. 33rd International Particleboard/Composite Materials Symposium. Washington State University, Pullman, WA, April 13-15.

Smith, P.M., G.M. Carter, T.M. Smith, and **M.P. Wolcott**. 1999. Applications needs and market pull for wood-plastic composites. 33rd International Particleboard/Composite Materials Symposium. Washington State University, Pullman, WA. April 13-15.

Wolcott, M.P. and K. Englund. 1999. A technology review for wood-plastic composites. 33rd International Particleboard/Composite Materials Symposium Proceedings. Washington State University, Pullman, WA, April 13-15.

Suzhou, Y., T.G. Rials, and **M.P. Wolcott**. 1999. Crystallization behavior of polypropylene and its effect on wood fiber composite properties. 5th International conference on Woodfiber-plastic Composites, Madison, WI, May 26-27.

Wolcott, M.P. 1999. Engineered wood-plastic composites for waterfront facilities. 5th International conference on Woodfiber-plastic Composites, Madison, WI, May 26-27.

Harper, D.P., **M.P. Wolcott**, and T.G. Rials. 1998. Chemical and physical interpretation of MDI cure in saturated steam environments. 2nd European Panel Products Symposium, Llaundudno, Wales, October 21-22.

Wolcott, M.P. 1997. Creep in wood-plastic composites. 4th Biannual Conference for Wood-Fiber/Plastic Composites. Madison, WI. May 12-14.

Rials, T.G. and **M.P. Wolcott**. 1997. Viewing wood-plastics as interpenetrating networks. 4th Biannual Conference for Wood-Fiber/Plastic Composites. Madison, WI. May 12-14.

Wolcott, M.P. 1997. Hardwood engineered lumber products. Eastern Hardwood Products Conference. Harrisburg, PA. April 28-30.

Hua, W. and **M.P. Wolcott**. 1996. Creep mechanisms in OSB. 50th Annual Meeting of the Forest Products Society. Minneapolis, MN.

Englund, K. and **M.P. Wolcott**. 1996. The use of synthetic gypsum as an inorganic binder in waste-paper fiberboard. 50th Annual Meeting of the Forest Products Society. Minneapolis, MN.

Wolcott, M.P. and C.C. Hassler. 1996. Reusable timber bridges for logging operations. 50th Annual Meeting of the Forest Products Society. Minneapolis, MN.

Wolcott, M.P. and T.M. Maloney. 1996. Wood composites: Past, present, and future. 50th Annual Meeting of the Forest Products Society. Minneapolis, MN.

Wolcott, M.P. and E. Lang. 1996. The application of viscoelastcity to the consolidation of wood composites. 1996 Conference on Experimental Mechanics, Society of Experimental Mechanics, Nashville, TN.

Wolcott, M.P. 1996. The role of thermoplastics in convention wood composites. 30th International Particleboard/Composite Materials Symposium. Washington State University, Pullman, WA.

Gardner, D.J., **M.P. Wolcott**, L. Wilson, Y. Huang, and M. Carpenter. 1995. Our understanding of wood surface chemistry in 1995. Wood Adhesives, 1995. Portland, OR.

Lang, E.M. and **M.P. Wolcott**. 1995. A model for the viscoelastic consolidation of wood-strand mats. 49th Annual Meeting of the Forest Products Society. Portland, OR.

Wolcott, M.P. and T.G. Rials. 1995. In situ cure monitoring of adhesives for wood-based composites. 29th International Particleboard/Composite Materials Symposium. Washington State University, Pullman, WA.

Rials, T.G., **M.P. Wolcott**, and R.E. Ysbrandy. 1995. Thermal properties of wood-fiber/polystyrene composites. 3rd Biannual Conference for Wood-Fiber/Plastic Composites. Madison, WI.

Liu, F.P., T.G. Rials, **M.P. Wolcott**, and D.J. Gardner. 1995. Interactions between wood-fibers and amorphous polymers. 3rd Biannual Conference for Wood-Fiber/Plastic Composites. Madison, WI.

Lang, E.M. and **M.P. Wolcott**. 1995. Modeling the consolidation of wood-strand mats. The 1995 Joint ASME Applied Mechanics and Materials Summer Meeting. Los Angeles, CA.

Wolcott, M.P., J. Nassar, R. Ysbrandy, D.J. Gardner, and T.G. Rials. 1994. Recycled wood-fiber urethane composites. 2nd Pacific Rim Bio-Based Composites Symposium, Univ. of British Columbia, Vancouver, Canada.

Gardner, D.J., F.P. Liu, **M.P. Wolcott**, and T.G. Rials. 1994. Improving interfacial adhesion between wood fibers and thermoplastics: A case study examining chemically modified wood and polystyrene. 2nd Pacific Rim Bio-Based Composites Symposium, Univ. of British Columbia, Vancouver, Canada.

Wolcott, M.P. 1994. Closing the press. Structural Board Association Research Technical Forum, Montreal, Canada.

Fuchs, S., C.C. Hassler, **M.P. Wolcott,** and C. West. 1994. Market opportunities for structural wood products in the factory-built housing industry. 48th Annual Meeting of the Forest Products Society, Portland, ME.

Lang, E. and **M.P. Wolcott**. 1994. Modeling the consolidation of yellow-poplar flake mats. 48th Annual Meeting of the Forest Products Society, Portland, ME.

Wolcott, M.P., T.G. Rials, and D.J. Gardner. 1994. Characterizing the interface in wood fiber/polymer composites. 48th Annual Meeting of the Forest Products Society, Portland, ME.

Wolcott, M.P. 1994. Mechanisms of creep and creep-rupture. ASTM D07 Meeting, Madison, WI

Gardner, D.J., D.W. Gunnells, and **M.P. Wolcott**. 1993. Chemical characteristics of short term aged wood surfaces. 67th Colloid and Surface Science Symposium, Toronto, Canada.

Huang, Y., D.J. Gardner, and **M.P. Wolcott**. 1993. A study of the rate process of heat-induced inactivation of wood surface using dynamic contact angle analysis. 67th Colloid and Surface Science Symposium, Toronto, Canada.

Wolcott, M.P., T.G. Rials, and D.J. Gardner. 1993. Recycled wood fiber-urethane composites. Polymer Processing Society Meeting, Morgantown, WV.

Rials, T.G., **M.P. Wolcott**, and J. Nassar. 1993. Wood fiber reinforced urethane composites. 2nd Wood Fiber-Plastic Composite Conference, Madison, WI.

Wolcott, M.P. 1992. Modular timber bridges for temporary stream crossings on logging roads. Society of Wood Science and Technology Visiting Scientist. February 12. NC State University, Raleigh, NC.

Wolcott, M.P. 1992. Hybrid wood/synthetic composites. Society of Wood Science and Technology Visiting Scientist. February 13. NC State University, Raleigh, NC.

Wolcott, M.P. 1992. Free volume interpretations of wood-moisture relationships. Society of Wood Science and Technology Visiting Scientist. February 14. NC State University, Raleigh, NC.

Wolcott, M.P. 1992. Free volume interpretations of wood-moisture relationships. Virginia Polytechnic Institute and State University. March 2. Blacksburg, VA.

Gunnells, D.W., **M.P. Wolcott**, and D.J. Gardner. 1992. Measuring the glass transition of wood using dynamic contact angle analysis. 66th Colloid and Surface Science Symposium. American Chemical Society. June 15. Morgantown, WV.

Wolcott, M.P., D. Moore, and J.J. Janowiak. 1992. Bending properties and nondestructive evaluation of red maple lumber. 46th Annual Meeting of the Forest Products Research Society. June 21-24. Charleston, SC.

Wolcott, M.P., D.J. Gardner, N. Generalla, and S.S. Shaler. 1992. Diffusion of thermosetting adhesives in wood. 46th Annual Meeting of the Forest Products Research Society. June 21-24. Charleston, SC.

Liu, P.F., **M.P. Wolcott**, and D.J. Gardner. 1992. Application of the microdebond test to lignocellulosic fibers. 46th Annual Meeting of the Forest Products Research Society. June 21-24. Charleston, SC.

Gardner, D.J., **M.P. Wolcott**, and D.W. Gunnells. 1992. Using dynamic contact angle analysis to study wood surface aging. 46th Annual Meeting of the Forest Products Research Society. June 21-24. Charleston, SC.

Wolcott, M.P. 1992. Future opportunities for recycled wood-based materials. 1st National Recycling Biobased Materials Conference. August 13-14. Oregon City, OR.

Wolcott, M.P., P.F. Liu, and D.J. Gardner. 1992. Using the microbond test to mechanically evaluate the wood-fiber/polymer interface. 204th National Meeting of the American Chemical Society Meeting. August 23-28. Washington, DC.

Wolcott, M.P. and T.G. Rials. 1992. In-situ cure monitoring of isocyanate adhesives during hot-pressing. Miles Corp. August 31. Pittsburgh, PA.

Davalos, J.F., **M.P. Wolcott**, and B. Dickson. 1992. Quality assurance and inspection manual for timber bridges. National Hardwood Timber Bridge Conference. October 20. University Park, PA.

Wolcott, M.P. 1992. Flexible wood fiber urethane composites. Temple-Inland Corp., Fiber Composite Division. November 24. Diboll, TX.

Wolcott, M.P. 1991. Curing kinetics of filled phenol-formaldehyde adhesives. Michigan Technological University, Houghton, MI.

Gunnells, D., D.J. Gardner, and **M.P. Wolcott**. 1991. The effects of moisture content, temperature, and aging on the dynamic contact angle analysis of wood. 45th Annual Meeting of the Forest Products Research Society, New Orleans, LA.

Shutler, E.L. and **M.P. Wolcott.** 1991. The recovery of polymeric cellular materials: Relation to increased dimensional stability of wood-based composites. 45th Annual Meeting of the Forest Products Research Society, New Orleans, LA.

Gardner, D.J., D.W. Gunnells, **M.P. Wolcott**, and L. Amos. 1991. Structural changes in wood polymers during the pressing of wood-composites. Amer. Chem. Soc. Cellulose, Paper, and Textile Div. Meeting, New Orleans, LA.

Wolcott, M.P., D.J. Gardner, and S. Shaler. 1990. The role of cell wall crosslinking in dimensional stability of wood-based composites. Advanced Technology Applications to Eastern Hardwood Utilization. Dept. of Forestry, Michigan State University, East Lansing, MI.

Gunnells, D., D.J. Gardner, and **M.P. Wolcott**. 1990. An improved adhesive system for bonding dimensionally stabilized wood. Advanced Technology Applications to Eastern Hardwood Utilization, Dept. of Forestry, Michigan State University, East Lansing, MI.

Wolcott, M.P., F.A. Kamke, P.E. Humphrey, and S. Ren. 1990. Mechanical deformation of the mat and wood components during pressing. 44th Annual Meeting of the Forest Products Research Society, Salt Lake City, UT.

Wolcott, M.P. 1990. Fundamental aspects of wood deformation pertaining to manufacture of wood-based composites. 44th Annual Meeting of the Forest Products Research Society, Salt Lake City, UT.

Wang, J.Z., **M.P. Wolcott**, E.H. Teague, F.A. Kamke, and D.A. Dillard. 1990. Experimental techniques to measure fiber and composite response to transient moisture exposure. 1990 Conference on Experimental Mechanics, Society of Experimental Mechanics, Albuquerque, NM.

Dillard, D.A., J.Z. Wang, F.A. Kamke, T. Ward, G. Wilkes, and **M.P. Wolcott**. 1990. The effects of transient moisture conditions on the viscoelastic behavior of fibers and composites. DURABILITY 1990, Brussels, Belgium.

Wolcott, M.P., B. Kasal, F.A. Kamke, and D.A. Dillard. 1989. Modeling wood as a polymeric foam: An application to wood-based composite manufacture. 3rd Joint ASCE/ASME Mechanics Conference. University of California at San Diego, LaJolla, CA.

RESEARCH LEADERSHIP

Bioproducts, Biofuels, and Bioenergy

Cavalieri, R.P., **M.P. Wolcott,** et al. 2011-2016. Northwest advanced renewables alliance (NARA): A new vista for green fuels, chemicals, and environmentally preferred products (EPPs). NIFA-USDA. $39,600,000. *(Personally Expended: $2,830,892, Administered: $36,769,108)*.

Description of Project and Role

Focus: Overcoming key supply-chain obstacles that prevent wood-based jet fuel and petrochemical substitutes from being economically viable in the Northwest US.

Output: Sustainable Biojet Production, Valuable Lignin Co-Products, Rural Economic Development, Supply Chain Coalitions, and Energy Literacy

Team: >50 Principal Investigators from 16 University, Industrial, NGO, and Gov't Organizations

Role: Project Co-Director, Team Leader for Conversion Team; Responsible for oversight of Sustainability Assessment, Education, and Outreach Teams; Research Member of Co-Products and Education Teams.

Wolcott, M.P., M. Gaffney, M. Garcia-Perez and X. Zhang. 2014-2016. Alternative jet fuel supply analysis. FAA/ASCENT. $770,000.

Description of Project and Role

Focus: Analyzing potential alternative jet fuel supply chains to support the FAA role in the UN ICAO CAEP efforts to assess potentials for reducing greenhouse gas productions from the aviation industry. Developing regional approaches for US production of alternative jet fuel to meet national targets.

Output: Sustainable Biojet Production, Valuable Lignin Co-Products, Rural Economic Development, Supply Chain Coalitions, and Energy Literacy

Team: 19 Co-Principal Investigators from WSU, Penn State, Purdue, MIT, UTK, UIllinois, UHawaii

Role: Project Lead. Responsible for coordinating research among university teams and coordinate with FAA Leadership; Lead supply chain research for the NW region

The activities listed below are efforts on my part to provide leadership to the developing area of chemical, materials, and fuels produced from bio-based resources. These efforts include regional and national/international committees, most of which have the goal of developing either new educational or research programs.

Committee	Position	Outputs and Contributions
USDA Sustainable Bioenergy	Panel Manager	- Evaluation and ranking of regional AFRI CAP proposals for biofuels and feedstocks
Agenda 2020 Department of Energy American Forest and Paper Assoc (AFPA)	Member	- Forest Industry Technology Roadmap - Nanotechnology Research Roadmap - International Conference on Nanotechnology in Forest Products - Review Panels for Agenda 2020 funded research
PNNL-WSU Integration Team Department of Energy Washington State University	Member	- Integrated Bioproducts Graduate Program - Chair of 1st Student from this program - New bioproducts facility funded and built
Research Initiative Committee Society of Wood Science and Technology	Chair	- Research Needs Workshop for Nanotechnology in Forest Products funded by NSF - Contributed to RFP language for USDA and NSF program calls - Develop and maintain weblog communicating significant information (swst.research.wsu.edu)
Review Team NSF/American Association for the Advancement of Science Environmental Protection Agency	Member	- NSF EPSCoR Center on Biorefineries - EPA Projects on Renewable Materials

Sustainable Design

I am a founding member and the first Director of the Institute for Sustainable Design. Along with Professors Greg Kessler (Director, School of Architecture and Construction Management), Donald Bender (Director, Wood Materials and Engineering Laboratory), and David McLean (Chair, Department of Civil and Environmental Engineering) this Institute was founded in the Fall of 2008 and borne from six years of cooperative projects towards green buildings and materials. The work of this Institute has expanded off this base to include Low-Impact Development (LID), Green Highways, and Sustainable Business Practices. A compilation of fund-raising activities to date:

Wolcott, M.P. 2009. College of Engineering and Architecture Berry Family Gift - ISD Directorship. $250,000.

Wolcott, M.P., D.A. Bender, and G.A. Kessler. 2008. Sustainable Residential Construction. Weyerhaeuser Foundation. $500,000.

Wolcott, M.P. 2008-2009. College of Engineering and Architecture Berry Family Gift Towards Faculty Development. $50,000. *(recipient)*

Sustainable Materials Development

I have acted as the principal investigator and project manager for five research contracts from the Office of Naval Research aimed at producing sustainable infrastructure materials with improved environmental and structural performance. In aggregate, the contracts have comprised 37 researchers representing 7 universities, 3 federal laboratories, and 5 companies. In my leadership capacity, I have been responsible for (1) developing the technical research direction, (2) selecting research team members, (3) managing over $13 million in research funding, and (4) organizing meetings, reports, and deliverables. In addition, I have been the lead researcher on the composite development component of this research. Tangible outputs of our first completed project include (1) test methods used in military performance specifications, proposed ASTM standards, and ICBO testing; (2) development of composite formulations currently used by over one-third of the commercial wood-plastic products; (3) development and deployment of structural prototypes in naval facilities; (4) six invention disclosures and patent applications; (5) thirty-one presentations at national and international meetings; (6) twenty peer-reviewed journal manuscripts; (7) thirteen Masters theses and two PhD dissertations. A compilation of the projects and sub-contracting follows:

Wolcott, M.P. et al. 2006-2009. Foundation Elements for Naval Low-Rise Buildings. Office for Naval Research. $1,034,996. *(Personally Expended: $558,091*; *Administered: $476,905).*
Subcontracts:
- Washington State University: 2 Co-PI's; $888,996
- Pennsylvania State University: 1 Co-PI's; $146,000

Wolcott, M.P. et al. 2003-2006. Durable wood composites for naval low-rise buildings. Office for Naval Research. $1,877,242. *(Personally Expended: $*922,953; *Administered: $954,289).*
Subcontracts:
- Washington State University: 3 Co-PI's; $1,452,122
- Pennsylvania State University: 1 Co-PI's; $195,021
- University of Idaho: 2 Co-PI's; $230,099
- Naval Facilities Engineering Service Center: 2 Co-PI's; ($95,000 funded through ONR)

Wolcott, M.P. et al. 2002-2005. Commercialization of navy advanced wood composites. Office for Naval Research. $1,686,340. *(Personally Expended: $*1,278,147; *Administered: $408,193).*
Subcontracts:
- Washington State University: 3 Co-PI's; $1,278,147
- Pennsylvania State University: 1 Co-PI's; $286,467
- University of Idaho: 1 Co-PI's; $75,226
- Delta Process Engineering: 1 Co-PI's; $46,5000
- Naval Facilities Engineering Service Center 2 Co-PI's; ($130,000 funded through ONR)

Wolcott, M.P. et al. 2001-2004. Naval advanced wood composites. Office for Naval Research. $3,793,541. *(Personally Expended: $1,919,206; Administered: $1,874,335).*
Subcontracts:
·Washington State University: 3 Co-PI's; $2,412,558
·Pennsylvania State University: 1 Co-PI's; $168,200
·University of Maine: 4 Co-PI's; $986,500
·University of Massachusetts: 1 Co-PI's; $104,500
·Honeywell Corp.: 2 Co-PI's; $121,783
·Naval Facilities Engineering Service Center: 2 Co-PI's; ($240,000 funded through ONR)
·Naval Research Laboratory: 2 Co-PI's; ($330,000 funded through ONR)
·US Forest Service, So. Research Laboratory: 1 Co-PI's; ($149,000 funded through ONR)

Wolcott, M.P. et al. 1997-2001. Engineered wood composites for naval waterfront facilities. Office for Naval Research. $6,073,000. (*Personally Expended*: $3,248,299; *Administered*: $2,824,701).
Subcontracts:
·Washington State University: 9 Co-PI's; $4,123,649
·Michigan Technological University: 2 Co-PI's; $89,950
·New Mexico Institute of Mining & Tech.: 1 Co-PI's; $144,818
·Pennsylvania State University: 1 Co-PI's; $156,500
·University of Maine: 1 Co-PI's, $343,597
·Center for Forest Products Research: 1 Co-PI's, $28,564
·BP AMOCO Corp.: 3 Co-PI's, $820,473
·Perrault & Associates: 1 Co-PI's, $106,500
·Strandex Corp.: 1 Co-PI's, $258,949
·Naval Facilities Engineering Service Center: 3 Co-PI's; ($360,000 funded through ONR)

GRANTS AND CONTRACTS* *(total of $61,970,483: personally expended $14,867,202)*

Washington State University *(WSU total of $60,754,826: personally expended $13,928,128)*

Wang, J., **M.P. Wolcott** and X. Zhang. 2015-2016. Mechanical pretreatment of wood for cellulosic sugar production on a demonstration scale. Univ. WA/JCATI. $60,324.

Beyreuther, T., **M.P. Wolcott** and D. Bender. 2015-2017. A pilot supply chain for advanced manufacture of CLT in the Pacific Northwest. USDA Forest Service. $249,993.

Wolcott, M.P., M. Gaffney, M. Garcia-Perez and X. Zhang. 2014-2016. Alternative jet fuel supply analysis. FAA/ASCENT. $770,000.

Wang, J., **M.P. Wolcott** and X. Zhang. 2014-2015. Mechanical pretreatment to produce cellulosic sugars at a pilot scale. Univ. WA/JCATI. $98,929.

Wen, H., J.W. Zhang, **M.P. Wolcott** and B. Muhunthan. 2014-2016. Novel development of bio-based binder for sustainable construction. DOT/FHWA. $999,939.

Cavalieri, R.P., **M.P. Wolcott,** et al. 2011-2016. Northwest Advanced Renewables Alliance (NARA): A new vista for green fuels, chemicals, and environmentally preferred products (EPPs). NIFA-USDA. $39,600,000. (Personally expended: $2,925,014, Administered: $36,674,986).

Wolcott, M.P., L. Haselbach and C. Poor. 2011-2016. Sustainable design guidelines to support the Washington state ferries terminal design manual. Washington State Department of Transportation. $748,624.

* Principal Investigator (PI) appears as first name on grant citation, co-PI's follow.

Wolcott, M.P., K. Olsen, C. Poor, T. Beyreuther and D. Ascher. 2010-2011. Integrated design experience (IDeX) project - Auburn environmental park district. City of Auburn. $95,000.

Wolcott, M.P., L. Haselbach, S. Brown, and D. Ascher. 2009-2011. A model for faculty, student, and practitioner development in sustainable engineering through an integrated design experience. National Science Foundation. $149,742.

Zhang, J.W., L. Jiang, and **M.P. Wolcott.** 2009-2010. Developing effective compatibilization of mirel PHA/starch blends. Metabolix. $39,300.

Brown, S., S. Shen, and **M.P. Wolcott**. 2008-2009. Sustainable roadway design and construction: An online course. UW/TransNow. $22,888.

Bahr, D.F., B. Lamb, D.P. Field, **M.P. Wolcott** and S. Medidi. 2007-2010. Development and implementation of an intensive short course, seminar, and mentoring for introducing undergraduates to research in engineering. National Science Foundation. $148,981.

Wolcott, M.P., D.A. Bender and J.D. Dolan. 2006-2009. Foundation elements for naval low-rise buildings. Office of Naval Research. $1,034,996. (Personally expended: $558,091, Administered: $476,905).

McDaniel, C., **M.P. Wolcott,** and D.I. McLean. 2005-2007. Composite material alternatives to timber in the construction of wing walls. Washington State Department of Transportation. $244,879.

Wolcott, M.P. and F.J. Loge. 2004-2009. Development of renewable microbial polyesters for cost effective and energy-efficient wood-plastic composites. INL/DOE. $935,681. (*Total program funds of $2.8 million*)

Loge, F.J. and **M.P. Wolcott.** 2004-2007. A novel EBM process utilizing renewable biopolymers to manufacture natural fiber reinforced thermoplastic composites. National Science Foundation. $200,000. (*grant moved to UC-Davis*)

Wolcott, M.P. 2004-2005. Natural fiber reinforced polymer composites I/UCRC. National Science Foundation. $10,000.

Laborie, M.P. and **M.P. Wolcott**. 2004-2007. Pan American collaboration on wood composites. Office of Naval Research. $102,719.

Wolcott, M.P. 2003. Santiago Chile travel. Office of Naval Research International Field Office. $12,657.

Englund, K.A. and **M.P. Wolcott**. 2003-2004. Extrusion of foamed polyvinyl chloride/wood flour composites. Wash. Tech. Center and Shoreline Industries LLC. $43,174.

Wolcott, M.P. et al. 2003-2006. Durable wood composites for naval low-rise buildings. Office of Naval Research. $1,877,242. (Personally expended: $922,953, Administered: $954,289).

Wolcott, M.P. 2002-2004. Extruded wood-plastic composite decking & retaining wall for Coast Guard shore facilities. US Department of Transportation/University of Maine. $128,676.

Wolcott, M.P. 2002-2004. Micro woodfiber composites. US Dept of Agriculture – CSREES Program/University of Idaho. $22,284.

Wolcott, M.P. 2002-2004. Extruded wood products for Inland Empire sawmills. USDA – Wood Utilization Research Program. $47,115.

Wolcott, M.P. et al. 2002-2005. Commercialization of navy advanced wood composites. Office of Naval Research. $1,686,340. (Personally expended: $1,278,147, Administered: $408,193).

Wolcott, M.P. 2001-2004. Extruded wood products for Inland Empire sawmills. USDA – Wood Utilization Research Program. $82,883.

Wolcott, M.P. et al. 2001-2004. Naval advanced wood composites. Office of Naval Research. $3,793,541. (Personally expended: $1,919,206, Administered: $1,874,335).

Wolcott, M.P., F. Loge, and J. Petersen. 2001-2003. Distributed physical and molecular separations for selective harvest of higher value wheat straw components. Dept of Energy/Idaho Wheat Commission/INRA. $319,000.

Wolcott, M.P. 2001-2003. Developing advanced polystyrene blends for wood-plastic composites. Wash. Tech. Center and McFarland Cascade Corp. $150,528.

Wolcott, M.P., D. Pollock, and K. Fridley. 2000-2003. Engineered lumber products and requirements from Inland NW species. USDA – Wood Utilization Research Program. $73,626.

Lamb, B., H. Westberg, **M.P. Wolcott**, and R. Folk. 2000-2002. Characterization and emission rate measurements of VOC's from lumber product manufacturing processes. USDA – Wood Utilization Research Program. $37,257.

Wolcott, M.P., D. Pollock, K. Fridley, S. Shook, and T. Gorman. 1999-2000. Engineered lumber products and requirements from Inland NW species. USDA – Wood Utilization Research Program. $100,167.

Lamb, B., H. Westberg, **M.P. Wolcott**, and R. Folk. 1999-2000. Characterization and emission rate measurements of VOC's from lumber product manufacturing processes. USDA – Wood Utilization Research Program. $49,594.

Bender, D., and **M.P. Wolcott**. 1999-2000. Screening hybrid poplar clones for new industrial uses. USDA – Wood Utilization Research Program. $44,658.

Cofer, W., D. Pollock, and **M.P. Wolcott**. 1998-2001. Modeling non-linear connector performance in wood structures. Idaho National Environmental and Engineering Laboratory. $437,586.

Wolcott, M.P. et. al. 1997-2001. Engineered wood composites for naval waterfront facilities. Office of Naval Research. $6,073,000. (Personally expended: $3,248,299, Administered: $2,824,701).

Wolcott, M.P. 1997-1998. Measuring and assessing variability in OSB. Structural Board Association. $40,000.

Wolcott, M.P. 1996-1999. Thermoplastics as modifiers of material structure in wood-strand composites. USDA National Research Initiative. $104,507.

Wolcott, M.P. 1996. Creep mechanisms in oriented strand board (OSB) Part II. Structural Board Association. $35,000.

Wolcott, M.P. 1996. In situ cure monitoring of UF bonded particleboard. US Forest Service. $10,000.

Wolcott, M.P. 1996. Creep and creep rupture studies of wood thermoplastic composites. Trex Corp. $73,996.

West Virginia University *(WVU total of $1,215,657: personally expended $939,074)*

Wolcott, M.P. 1994-1995. Mechanical evaluations of wood/thermoplastic interfaces. US Forest Service. $30,600.

Wolcott, M.P. 1994-1995. Creep mechanisms in oriented strand board (OSB) Part I. Structural Board Association. $28,364.

Davalos, J., E. Barbero, **M.P. Wolcott**, and D.J. Gardner. 1994-1995. Interface delamination of wood-FRP laminates. Phase II: Mode II fracture under bending-induced shear loading. US Forest Service. $55,185.

Wolcott, M.P. and C.C. Hassler. 1994-1995. Structural uses of Appalachian hardwood timbers. US Forest Service. $29,300.

Halebe, U.B., H. Gangarao, and **M.P. Wolcott**. 1993-1994. Nondestructive evaluation of green wood using stress wave timing. US Forest Products Laboratory. $32,144.

Wolcott, M.P. and C.C. Hassler. 1993-1995. Stress wave NDE of yellow-poplar logs. USDA Forest Service. $35,000.

Davalos, J., E. Barbero, **M.P. Wolcott** and D.J. Gardner. 1993-1994. Interface delamination of wood-FRP laminates. Phase I: Adhesive/FRP selection and bond characterization. USDA Forest Service. $56,000.

Hassler, C.C., **M.P. Wolcott**, and J. Stopha. 1993-1994. Technological and economic feasibility of producing gypsum-fiberboard and cement-fiberboard in North Central West Virginia from power plant waste and recycled wood fiber. Coal and Energy Research Bureau. $20,000. WEST-MON-TY Resource Conservation and Development Area. $26,950. Total Budget: $46,950.

Stopha, J., C.C. Hassler, and **M.P. Wolcott**. 1993-1994. Market assessment for gypsum-fiberboard and cement-fiberboard manufactured in North Central West Virginia with power plant waste and recycled wood fiber. US Forest Service. $29,300.

Hassler, C.C. and **M.P. Wolcott**. 1992-1993. Fabrication, installation, and evaluation of modular timber bridges for temporary logging applications. State of West Virginia, Div. of Forestry. $39,660.

Wolcott, M.P. and D.J. Gardner. 1992-1993. The influence of graft molecular weight on the wood fiber/polymer interface. USDA Forest Service, Southern Experiment Station. $10,400.

Gardner, D.J., **M.P. Wolcott**, and L. Wilson. 1992-1994. Molecular response of wood surfaces to environmental influences. National Research Initiative, Competitive Grants Program. $98,000.

Wolcott, M.P. and D.J. Gardner. 1992. Dynamic mechanical analysis instrumentation. National Research Initiative. USDA Granting Agency: $50,000, State of WV: $50,000.

Gardner, D.J., **M.P. Wolcott**, and L. Wilson. 1992. X-Ray photoelectron spectroscopy instrumentation. National Research Center for Coal and Energy at West Virginia University. $233,000.

Hassler, C.C. and **M.P. Wolcott**. 1991-1993. Bending properties of beech and hickory. USDA Forest Service. $20,230, one-year amendment $19,565. Total: $39,795.

Wolcott, M.P. and Hassler, C.C. 1991-1992. Opportunities in stressed timber deck bridges for logging operations. Technical Assistance Center/WV Tech. $9,762.

Hassler, C.C. and **M.P. Wolcott**. 1991-1992. Assessing value-added manufacturing alternatives for the output of the Columbia-West Virginia plant in Craigsville, WV. Technical Assistance Center/WV Tech. $9,515.

Gardner, D.J. and **M.P. Wolcott**. 1991-1992. Wood-synthetic composites for bridge applications: Wood reinforced with pultruded fiber reinforced composites. USDA Forest Service. $25,000.

Wolcott, M.P. 1991-1993. A model for the viscoelastic consolidation of particle/fiber mats. National Research Initiative Competitive Grants Program. $93,000.

Wolcott, M.P. and D.J. Gardner. 1990-1992. The role of cell wall crosslinking in dimensional stability of wood-based composites. USDA/CSRS Wood Utilization Research Special Grant. $25,000.

Gardner, D.J. and **M.P. Wolcott.** 1990-1992. An improved adhesion system for bonding dimensionally stabilized wood. USDA/CSRS Wood Utilization Research Special Grant. $25,000.

Davalos, J., **M.P. Wolcott**, H. Gangarao, and C.C. Hassler. 1990-1991. A timber bridge inspection manual. Pennsylvania Department of Transportation (PennDOT). $80,000 (9 months).

Janowiak, J.J., H.B. Manbeck, **M.P. Wolcott**, and J. Davalos. 1990-1992. Preliminary refinement of hardwood design stress values. Pennsylvania Department of Transportation (PennDOT). $50,000.

Gangarao, H., J. Davalos, **M.P. Wolcott**, and B. Dickson. 1990-1992. Structural monitoring of stress-laminated bridges constructed in West Virginia. USDA Forest Service. $34,682.

GRADUATE STUDENTS CHAIRED** *(total of 43)*

Peter Gray**, PhD. *(In Progress)*. Economic Sciences, Washington State University, Pullman, WA.

Dan Howe, PhD. *(In Progress)*. Chemical Engineering, Washington State University, Pullman, WA.

Jinxue Jiang, PhD. *(In Progress)*. Materials Science and Engineering, Washington State University, Pullman, WA.

Huinan Liu, MS. *(In Progress)*. Engineering, Washington State University, Pullman, WA.

Yalan Liu, PhD. *(In Progress)*. Materials Science and Engineering, Washington State University, Pullman, WA.

Natalie Martinkus**, PhD. *(In Progress)*. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 4 *(Pres:2, Proc:1, PRPub:1)*

Fang Chen, PhD. 2013. Leakage control and characterization of form stable phase change materials: polymer(matrix)/polymer(PCM) binary blends and natural fiber/polymer(matrix)/polymer(PCM) ternary composites. Materials Science and Engineering, Washington State University, Pullman, WA.
·Publication output: 5 *(Pres:2, Proc:1, PRPub:2)*
·Microsoft

Brent Olson, PhD. 2011. Residential building material reuse in sustainable construction. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 2 *(Pres:1, Proc:1)*
·Technical Research Director, Jeld-Wen

Christophe Parroco, MS. 2011. Influence of design and climate change on the annual energy consumption of a passive solar house. Civil Engineering, Washington State University, Pullman, WA.
·Researcher, Green Building Research Laboratory (GBRL), Portland State University

Camille Pirou, MS. 2011. Influence of different building practices on the performance of a passive solar design greenhouse. Environmental Engineering, Washington State University, Pullman, WA.
·Engineer, Environmental Studies, SEPOC Energy, France

Elena Ten, PhD. 2011. Poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate) – cellulose nanowhiskers composites by solution casting. Materials Science and Engineering, Washington State University, Pullman, WA.
·Publication output: 10 *(Pres:5, Proc: , BC:1, PRPub:4)*
·Polymer Scientist, W.L. Gore and Associates, Flagstaff, AZ

Meng-Hsin Tsai, PhD. 2011. Investigation of a sustainable alternative wood bio-plastic composite. Materials Science and Engineering, Washington State University, Pullman, WA.
·Publication output: 5 *(Pres:3, Proc:1, BC:1)*
·William Wiley Graduate Student Exposition Award, 1st Place, 2010
·Material Development Engineer/Scientist, Polymera, Inc.

Kyle Holman, MS. 2010. Adaptable shear wall layout in low-rise and light framed structures. Civil Engineering, Washington State University, Pullman, WA.

Andrew Kracht, MS. 2010. Implementation of moment frame connections scaled to residential construction: Rivet connected I-joist moment frames. Civil Engineering, Washington State University, Pullman, WA.

** Indicates students co-chaired.

Alicia J. Miller, MS. 2010. A comparison of residential green building programs. Environmental Science, Washington State University, Pullman, WA.

Timothy P. Olson, MS. 2010. Design for deconstruction and modularity in a sustainable built environment. Civil Engineering, Washington State University, Pullman, WA.
·Engineer, Sarens, Missoula, MT

Lee-Wen Chen**, MS. 2009. Extrudable melamine resin for wood plastic composites. Civil Engineering, Washington State University, Pullman, WA.

Inès de Sainte Marie d'Agneaux, MS. 2009. Development of sustainability guidelines for infrastructure and their application to passenger ferry terminals. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 1 *(Pres:1)*
·Environmental Engineer, ARCADIS, Walnut Creek, CA

William Gacitua Escobar, PhD. 2008. Influence of wood species on properties of wood/HDPE composites. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 10 *(Pres:5, Proc:3, PRPub:2)*
·Assistant Professor, Universidad Del Bio-Bio, Chile

Mark Hatch, MS. 2008. Processing, mechanical, and environmental performance of engineering polymer wood-plastic composites. Civil Engineering, Washington State University, Pullman, WA.
·Project Engineer, Beaudette Consulting Engineers

Zachary Rininger**, MS. 2008. Utilization of small diameter timbers in pultuded long strand composites. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 1 *(Pres:1)*
·2nd Place tie: Graduate Student Presentation, 2008 Northwest Forest Products Academic Forum

Scott Anderson**, MS. 2007. Wood fiber reinforced bacterial biocomposites: effects of interfacial modifiers and processing on mechanical and physical properties. Mechanical Engineering, Washington State University, Pullman, WA.
·Publication output: 6 *(Pres:2, Proc:2, BC:1, PRPub:1)*
·Materials Research Engineer, Michelin Tire Company

Jinwu Wang**, PhD. 2007. Cure kinetics of wood phenol-formaldehyde system. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 8 *(Pres: 3, PRPub:5)*
·Assistant Research Professor, Washington State University

Andrew Schildmeyer, MS. 2006. Temperature and time dependent behaviors of a wood polypropylene composite. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 1 *(PRPub:1)*
·Design Engineer, Putnam Collins Scott Associates.

Matthew Chastagner, MS. 2005. Slit die rheology of HDPE and ABS based wood plastic composites. Mechanical Engineering, Washington State University, Pullman, WA.
·Publication output: 2 *(Pres:1, Proc:1)*
·PhD Candidate, University of Michigan

Erik Coats**, PhD. 2005. Sustainable production of biodegradable thermoplastics through wastewater treatment, and a new theory on biological phosphorus removal. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 7 *(Pres:3, Proc:1, PRPub:3)*
·Associate Professor, University of Idaho, Moscow, ID

Kristin DuChateau**, MS. 2005. Structural design and performance of composite wall-foundation connector elements. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 4 *(Pres:2, Proc:2)*
·Structural Engineer, Wiss, Janney, Elstner Associates, Inc., Minneapolis, MN

Ryan Kobbe, MS. 2005. Creep behavior of a wood-polypropylene composite. Civil Engineering, Washington State University, Pullman, WA.
·Assistant Lecturer, University of Wyoming

Andrew Slaughter, MS. 2004. Design and fatigue of a structural wood-plastic composite. Civil Engineering, Washington State University, Pullman, WA.
·Computational Scientist, Idaho National Laboratory

David Harper, PhD. 2003. Structure property relations in wood/plastic composites. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 12 *(Pres:5, Proc:3, PRPub:4)*
·John Osborne Outstanding Graduate Student, 2002
·William Wiley Graduate Student Exposition Award, 2nd Place, 2002
·Assistant Professor, University of Tennessee

Alejandro Bozo, PhD. 2002. Spatial variation of wood composites. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 2 *(Pres:1, Proc:1)*
·Assistant Professor, University of Chile

Sang Yeob Lee**, MS. 2002. Transcrystallization behavior and interfacial strength of a semicrystalline polymer combined with thermomechanical pulp (TMP) fibers. Forest Products, University of Idaho, Moscow, ID.
·Publication output: 2 *(Pres:1, Proc:1)*
·Honorable Mention, Wood Award, 2001
·Post-Doctoral Research Associate, Mississippi State University

Vikram Yadama**, PhD. 2002. Out-of-plane strand orientation effects in wood-strand composites. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 5 *(Pres:2, PRPub:3)*
·William Wiley Graduate Student Exposition Award, 1st Place, 2002
·Associate Professor and Extension Specialist, Washington State University

Karl Englund, PhD. 2001. Consolidation and friction mechanisms of wood composites and their influence on pultrusion processing. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 5 *(Pres:2, Proc:1, PRPub:2)*
·Associate Research Professor and Extension Specialist, Washington State University

Kristin Meyers, MS. 2001. Impact of strand geometry and orientation on mechanical properties of strand composites. Civil Engineering, Washington State University, Pullman, WA.
·Research Engineer, Trus Joist Corp.

Jeff Linville, MS. 2000. The Influence of a horizontal density distribution on moisture related mechanical degradation of oriented strand composites. Civil Eng, Washington State University, Pullman, WA.
·Publication output: 4 *(Pres:2, Proc:2)*
·Senior Engineer, Industry and Code Activities, Weyerhaeuser

Scott Lockyear, MS. 1999. Mechanical analysis of transversely loaded wood/plastic sections. Civil Engineering, Washington State University, Pullman, WA.
·Engineer, American Forest & Paper Association

David Harper, MS. 1998. The evaluation of 4-4' diphenylmethane diisocyanate cure in a saturated steam environment. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 4 *(Pres:2, PRPub:2)*
·Assistant Professor, University of Tennessee

Wenhua Hua, MS. 1997. Creep mechanisms in oriented strand board. Civil Engineering, Washington State University, Pullman, WA.
·Publication output: 3 *(Pres:1, Proc:2)*
·Engineer Trainer/Supervisor, Trus Joist Corp.

Fei Peng Liu PhD. 1994. Characterizing interfacial adhesion between wood fibers and a thermoplastic matrix. Forest Resource Sciences, West Virginia University, Morgantown, WV.
·Publication output: 8 *(Pres:4, Proc:2, PRPub:2)*
·Project Leader and Research Scientist, Huber Corp.

John Nassar, MS. 1994. Production and analysis of wood-fiber polyurethane composites. Forestry, West Virginia University, Morgantown, WV.
·Publication output: 3 *(Pres:2, PRPub:1)*
·Technical Service Engineer, Borden Chemicals

Gene Shutler, MS. 1992. Relating the compression and recovery of cellular materials to dimensional stability of wood composites. Forestry, West Virginia University, Morgantown, WV.
·Publication output: 2 *(Pres:1, PRPub:1)*
·Technical Manager, Weyerhaeuser Corp.

Douglas A. Kish**, MS. 1991. Longitudinal bending stiffness of stress-laminated timber decks. Civil Engineering, West Virginia University, Morgantown, WV.
·Publication output: 1 *(PRPub:1)*
·Design Engineer

POST-DOCTORAL FELLOWS SUPERVISED*** *(total of 13)*

Name	Dates	Research Topic
Lanxing Du	2014-2016	Nano-Cellulose Production from Saccharification Residuals
Yu Fu	2014-2015	Milling and Extrusion Methods for Sugar Production using Micronized Wood Powders
Fang Chen	2013-2014	Torrefied Wood Particles for Stormwater Treatment Media
Xiaxing Zhou	2013-2014	Natural Fiber Thermoplastic Composites Produced with Micronized Wood Particles
Long Jiang***	2005-2008	Biopolymer Blends and Reinforced Natural Fiber Thermoplastics
Han-Seung Yang	2004-2008	Fatigue and Damage Modeling of Natural Fiber Thermoplastics
Tieqi Li	2001-2004	Rheological Assessment of Natural Fiber Filled Thermoplastics
Anke Schirp***	2001-2004	Agro-Fiber Modification Using Fungal Treatment
Karl Englund	2001-2003	Moisture and Photo Stable Formulations for Wood Composites
Jahangir Chowdhury	2000-2002	Coupling Agent Development for Polyolefin Wood Composites
Suzhou Yin	1999-2001	Polyolefin-Wood Interphase Evaluation
John Hermanson	1998-1999	Mechanical Evaluation of Thermoplastic Wood Composites
Tim Adcock	1998-1999	Thermoplastic Wood Composite Development
Elemer Lang	1993-1995	Structure-Property Modeling of Wood Strand Composites
John Ysbrandy***	1992-1993	Natural Fiber Reinforced Urethanes

EXTERNAL GRADUATE COMMITTEES AND REVIEWER *(total of 14)*

Name	Degree	Year	Research Topic
Costel Barbuta	PhD	2011	Engineered Flooring: Development of OSB Substrates and Characterization of Stresses (Laval University, Canada)
Feng-Cheng Chang	PhD	2011	Micromechanical Modeling of Natural Fiber Reinforced Thermoplastics (U British Columbia, Canada)
Soumendra Nath Patra	PhD	2010	Manufacturing and Characterization of Electrospun Nanostructured Mats from Poly(lactic acid) (U Auckland, NZ)
Marie LeBaillif	PhD	2008	Extrusion of Cellulose Fibers Polypropylene Composites (Norwegian University of Science and Technology)
Daniel Bondeson	PhD	2007	Biopolymer-based Nanocomposites: Processing and Properties (Norwegian University of Science and Technology)
James Fabiyi	PhD	2007	Weathering Processes of WPC (U Idaho)
Roya Khalil	PhD	2007	Impact of the surface chemistry of rice hull ash on the properties of its composites with polypropylene (RMIT University, Australia)
Marcia Vidal Bastias	PhD	2006	Modeling of Composite Hot Pressing (Laval University, Canada)
Angelo Facca	PhD	2006	Micromechanical Models for Natural Fiber Reinforced Composites (U Toronto, Canada)
Lance W. Gallagher	MS	2006	Micronized Wood Thermoplastic Composites (U Idaho)
Martin Keane	PhD	2006	Vibration Analysis of Composites for Pianos (U Auckland, NZ)
Narayana Srinivasan	PhD	2006	Thermoforming of Wood Composites (U Auckland, NZ)
Yan Li	MS	2006	Fungi and Alkali Treated Hemp Fibre for Reinforcement in Composites (U Waikato, NZ)
Smith T. Sundar	MS	2005	Chemical Modification of Wood Fiber to Enhance the Interface Between Wood and Polymer in Wood Plastic Composites (U Idaho)

*** Indicates Post-Docs co-supervised

GRADUATE COMMITTEES MEMBER AND REVIEWER *(total of 45)*

Name	Degree	Year	Research Topic
Xiaojie Guo	PhD	current	Mechano-Chemo Approaches for Producing Lignin Thermoplastic and Thermosetting Resins
Allen Warner Eyler	PhD	current	Studies of Soy Protein Structural Control and its Application to the Fabrication of Nano-Biocomposites
Vikram Ravi	PhD	current	Investigations of the Air Quality Impacts of Aviation Biofuels Industry in the Pacific Northwest
Wenjia Song	PhD	current	Developing Soy Flour-based Superabsorbent Polymer Through Reactive Extrusion
Joseph P. Smith	MS	2015	Assessing Copper and Zinc Adsorption to Thermally Treated Lignocellulosic Biomass
Sushanta Bhusal	PhD	2013	Utilizing Bioasphalt as Sustainable Technology in the Field of Hot Mix Asphalt Industry
Gerald Schneider	MS	2013	Construction and Demolition Recycled Wood Waste Assessment within the Northwest United States
Xiaojie Guo	MS	2012	Investigation of polyclactic acids/-polyoxymethylene blends: crystallization behavior and heat resistance
Yi Wang	PhD	2012	Profile Forming of Wood-Strand Composites: Processes, Forming Characteristics and Product Properties
Weston Wood	PhD	2012	Processing, wear, and mechanical properties of polyethylene composites prepared with pristine and organosilane-treated carbon nanofibers
Peng Zhan	MS	2012	Investigation of poly(lactic acid) (PLA)/sugar beet pulp bioplastics: processing, morphology, properties and foaming application
Bo Liu	PhD	2011	Investigation of In-situ Poly(lactic acid)/Soy Protein Concentrate Composites: Composite Preparation, Properties and Foam Application Development
Devlin Montfort	PhD	2011	Conceptual and Epistemological Undercurrents of Learning as a Process of Change
Michael Thompson	MS	2011	Integrating Green Rating Systems: A Case Study for Ferry Terminal Stormwater Projects
Feng Chen	PhD	2010	Investigation of Soy Protein (SP) Blends Prepared by Simultaneous SP Plasticization and Mixing
Daniel Tappel	MS	2010	Diamond Pier Foundation Analysis
Derek Brosious	MS	2008	Nonlinear Material Behavior and Fatigue-Accumulated Damage of Wood Plastic Composites
Steve Michael	MS	2008	Thermoplastic Encapsulation of Wood Strand Composites Using a Tie-Layer
Sudip Chowdhury	MS	2006	A Mechanism to Improve Durability of Oriented Strand Composite
Barun Gupta	MS	2006	Development of a Coating Technology for Wood Plastic Composites
Jun Qian	MS	2006	Investigation of Crystallization of Poly(3-Hydroxybutyrate-co-3-Hydroxyvalerates) and their Bamboo Pulp Reinforced Composites
Yuefei Wu	MS	2005	Dynamic Analysis of Ferry Vessels on Wingwall Structures with Wood Plastic Composite Rubbing Blocks
Phillip Johnson	MS	2003	NIR Spectroscopy of Solid Wood
Kirk D. Kludt	MS	2003	NIR Spectroscopy of Solid Wood
Matthew W. Zawlocki	MS	2003	Dissipative Energy Methods for Wood-Plastic Composites
Peter J. Cates	MS	2002	Connection Performance of Structural Wood Composites
Christopher W. Brandt	MS	2001	Duration of Load Behavior of Wood-Plastic Composites

William R. Parsons	MS	2001	Connection Design for Hollow Wood Composites
Douglas J. Pooler	MS	2001	Creep and Fatigue of Wood-Plastic Composites
Brian J. Tucker	PhD	2001	Stress-Wave Analysis of Wood Composite Plates
Kevin J. Haiar	MS	2000	Mechanics of Wood-Plastic Composite Sections
Thanadon Sattabongkot	MS	2000	Dowel Bearing Strength of Wood Composites
Jeffrey J. Peters	MS	1999	Engineering Properties of Hybrid Poplar Composites
Sudarshan Rangaraj	MS	1999	Creep and Fatigue of Wood-Plastic Composites
Stephen J. Carstens	MS	1998	Bolt Bearing Behavior of Engineered Wood Composites
Tom Merz	MS	1998	FE Modeling of Structure in Wood Strand Composites
Douglas F. Knotts	MS	1995	VOC Emissions for Wood Drying
Somnath S. Sonti	MS	1995	FRP Reinforced Wood Composites
Gangadhar M. Bidigalu	MS	1994	FRP Reinforced Wood Composites
Yubo Huang	MS	1994	Surface Characterization of Wood
David W. Gunnells	MS	1992	Surface Energetic of Wood Exposed Thermal Cycles

Course Work Only Students

Name	Degree	Year	Emphasis Area
Bernt Johnson	MS	2011	Timber Structures
Jennifer Johnston	MS	2011	Water Resources
Tyler Pierce	MS	2011	Low-Impact Foundations
Kevin Ryan	MS	2011	Green Wall Design
Cassandra Tyler	MS	2011	Low-Impact Stormwater Methods

UNDERGRADUATE AND INTERNATIONAL STUDENTS SUPERVISED

(total of 23)

Name	Year	Program
Rodney Seals	2014	NARA-SURE, WSU
Eileen Wu	2014	NARA-SURE, WSU
Kane Norton	2013	NARA-SURE, WSU
Madeline Fuchs	2012	NARA-SURE, WSU
Rongxian Ou	2011-13	China Scholarship Council, Northeast Forest University
Amanda Kessel	2011	NSF-REU, Montana State University
Joseph Smith	2011	Undergraduate Industrial Research, Penn State University
Chusheng Qi	2010-12	China Scholarship Council, Northwest A&F University
Krista Stancombe	2010	NSF-REU, WSU
John Bergeleen	2009	NSF CUREE, WSU
Sarah Loftus	2009	NSF CUREE, WSU
Joel Turtle	2009	NSF-REU, Texas A&M
Christophe Parroco	2008	EPF, France
Joel Turtle	2008	NSF-REU, Texas A&M
Ines de Sainte Marie	2007	EPF, France
Goran Grubbstrom	2007	Lulea University of Technology, Sweden
Kristen Howard	2007	NSF-REU, WSU
Erving Morelius	2007	NSF-REU, U Texas El Paso
Sebastien Migneault	2006	University of Quebec-Abitibi-Temiscamingue, Canada
Patrice Soulounganga	2006	Laval University, Quebec, Canada
Guillaume Menier	2005	ENSTIB, University of Nancy, France
Joel Soucy	2005	University of Quebec-Abitibi-Temiscamingue, Canada
Pierre Blanchet	2001	Laval University, Quebec, Canada

UNDERGRADUATE COURSES TAUGHT *(total of 10)*

Washington State University

Multidisciplinary Engineering Design I. 3 credits. Needs analysis and conceptualization of technological products and business plan for target market; multidisciplinary team development. *Year(Enrollment, Evaluation): 2009(9,), 2010, 2011, 2012.*

Multidisciplinary Engineering Design II. 3 credits. Prototype solution developed and evaluated and business plan completed; presentation to stake holders; team development and assessment. *Year(Enrollment, Evaluation): 2010(11,), 2011, 2012, 2013.*

Structural Composite Material Design. 3 credits. Behavior, analysis and design of fiber-reinforced plastic composite structures; micro, ply and laminate mechanics; reinforcement of concrete and wood. *Year(Enrollment, Evaluation): 2008(19, 3.89).*

Innovation in Design. 2 credits. Engineering and architectural creativity; role, function, enhancement, integration in design methods. Team taught. *Year(Enrollment, Evaluation): 1997(75, NA).*

Statics. 3 credits. Forces, moments, resultants, equilibrium, analysis of structures, section properties, and shear/moment diagrams. *Year(Enrollment, Evaluation):2006(61, 4.58), 2003(110, 4.34), 2002(105, 4.29).*

Dynamics. 3 credits. Kinematics and kinetics of particles and rigid bodies. Energy methods and impulse/momentum solutions to dynamic problems. *Year(Enrollment, Evaluation): 1998(39, 4.53).*

Statics and Strength of Materials. 4 credits. Force and moment systems, force resultants, equilibrium, truss analysis, stress, strain, material properties, tension and compression loading, beam theory. *Year(Enrollment, Evaluation): 1997(48, 4.44), 1996(46, 4.52).*

West Virginia University

Wood-Based Composites. 3 credits. Lecture and laboratory course covering wood composite materials, manufacture, and design. *Year(Enrollment, Evaluation): 1994(7, 4.5), 1993(6, 3.8).*

Mechanical Properties of Wood. 3 credits. Lecture and laboratory course on wood mechanics for wood science students. Lecture covers an introduction to statics, strength of materials, anisotropic elasticity, beam theory. Laboratory focuses on material evaluation. *Year(Enrollment, Evaluation):1994(10, 4.0), 1993(13, 4.1), 1992(13, 3.3), 1991(6, 4.3), 1990(9, 4.1), 1989(6, 3.9).*

Wood Technology. 3 credits. Introduction to wood science for forestry students. General wood properties and products; wood identification. *Year(Enrollment, Evaluation):1990(22, 3.0).*

GRADUATE COURSES TAUGHT *(total of 9)*

Washington State University

Advanced Topics in Structural Engineering. 3 credits. Elastic stability, plates and shells, other relevant topics. *Year(Enrollment, Evaluation): 2010(6,), 2009(6,)*

Advanced Topics in Environmental Engineering Practice. V 1-4 credits. Analysis and evaluation of air/water/soil pollution problems, new measurement methods, hazardous waste treatment, global climate change, and water/wastewater treatments. *Year(Enrollment, Evaluation): 2010(3,), 2009(3,)*

Natural Fiber Thermoplastic Composites. 3 credits. Lecture and laboratory course on the design and manufacture of natural fiber thermoplastic composites. Fundamentals of natural fibers and polymers.

Fundamentals of natural fibers and polymers, compounding, die design, material structure, short fiber composite theory, creep, creep-rupture, applications, and product engineering. *Year(Enrollment, Evaluation):2005(18, 4.58).*

Engineered Wood Composites. 3 credits. Lecture course on the design and use of engineered wood composite materials. Beam and plate elements are included.
Year(Enrollment, Evaluation): 1996(5, 4.75).

Design and Processing of Wood Composites. 3 credits. Lecture and laboratory on the theory and practice of manufacturing non-veneer wood composites. *Year(Enrollment, Evaluation): 2000(7, 4.50), 1998(11, NA).*

Advanced Mechanics of Materials. 3 credits. Theory of stress and strain, anisotropic elasticity, viscoelasticity, failure theories, and energy methods. Advanced topics in classical mechanics of materials: prismatic sections and thick cylinders in torsion, curved beams, beam on an elastic foundation.
Year(Enrollment, Evaluation): 2005(5,NA), 2000(8, 4.32), 1998(14,4.21), 1997(10, 4.44), 1996(10, 3.50).

Graduate Seminar. 1 credit. Lectures and reports on current developments in research and practice.
Year(Enrollment, Evaluation): 2003(12, NA), 2002(12, NA), 2001(12, NA), 1998(14, NA).

West Virginia University

Materials for Infrastructure Systems. 3 credits. Introduction to advanced material behavior (anisotropic elasticity, classical lamination theory, viscoelasticity, and failure criterion) and design with material systems (steel, concrete, polymers, and fiber-reinforced composites) for civil engineering graduate students. Team-taught with mechanical and civil engineering faculty for one semester. *Year(Enrollment, Evaluation):1990(14, NA).*

Advanced Mechanics of Wood-Based Materials. 3 credits. Advanced mechanics topics pertaining to the manufacture and use of wood-based materials. Topics include anisotropic elasticity, mechanics of cellular materials, linear viscoelasticity of amorphous polymers, and curing kinetics for polymers. *Year(Enrollment, Evaluation):1993(3, 4.5), 1991(5, 4.3).*

PROFESSIONAL AFFILIATIONS AND SERVICE

Society of Wood Science and Technology
· Past President – 2015
· President – 2014
· President elect – 2013
· Vice-President – 2012
· Chair of Research Initiatives Committee – 2004, 2005
· Critical Issues Committee Member – 2004, 2005
· Publications Committee – 2002
· Board of Directors – 1996, 1997
· Chair of Committee for New Accreditation Standards – 1997
· Member Visiting Scientist and Accreditation Committee – 1992, 1993, 1994
· Member

Forest Products Society
· IT/Web Committee – 2011
· Chair, Strategic Planning Committee, Electronic Communications – 2002
· Strategic Planning Committee, Publications Committee – 2002
· Board of Directors – 1999, 2000, 2001
· Annual Meeting Program Committee – 2000
· Regional Board of Trustee – 1993
· Regional Meeting Program Committee – 1992, 1993, 1994
· Membership Chairman Carolina-Chesapeake Section – 1990, 1991
· Technical Interest Group Chair – 1990, 1991, 1992
· Member

American Society for Testing and Materials
· Member of D7 Committee – 2003, 2004, 2005
· Member of D14 Committee – 2003, 2004, 2005
· Member of D20 Committee – 2003, 2004, 2005
· Technical Advisee to Fiber Reinforced Glulam Sub-Committee – 1994
· Technical Advisee to Duration of Load Sub-Committee –1994
· Technical Advisee to Wood/Thermoplastic Composite Sub-Committee – 1994

American Society of Civil Engineers
· Research Priorities - Section Leader – 2008, 2009

Society of Experimental Mechanics
· Technical Subcommittee on Wood and Wood-Based Composites – 1994
· Interim Executive Board Member – 1994

American Chemical Society, Member
Society of Plastics Engineers, Member
Xi Sigma Pi, Member
Sigma Xi, Member

Washington State Departments of Natural Resources and Commerce
· Washington State Forest Biomass Coordination Group, Member - 2013

Starbucks Recyclable Cup Advisory Team
· Member - 2009

FEDERAL AGENCY SERVICE

Department of Energy

Forest Products Industry Agenda 2020
· Nanotechnology Roadmap Committee – 2004, 2005, 2006
· Wood and Wood Composites Research Platform Committee – 2005
· Agenda 2020 CTO Committee – 2005, 2006
PNNL-WSU Integration Team for Bioproducts and Biorefineries
· Committee Member – 2005, 2006

National Science Foundation

Proposal Panel Reviewer
· P111742 Sustainable Composite Structures – 2011
· P110803 Research in Engineering Education – 2011
Research Needs for Nanobiomaterials Workshop
· Workshop Co-Chair – 2005
· Final Report Co-Author – 2006
Review Team for EPSCoR Research Center
· Member – 2006, 2007, 2008, 2009, 2010, 2011, 2012
· Administered by American Association for the Advancement of Science (AAAS)
· Investing in Maine Research Infrastructure: Sustainable Forest Bioproducts

US Department of Agriculture

National Institute of Food and Agriculture (NIFA)
· Panel Manager – AFRI A6101, Development and Production of Regionally Appropriate Biomass Feedstocks CAP - 2013
Advisory Committee
· Member – USDA-NIFA-AFRI #2012-00942, Regional Bioenergy Policy Effectiveness: Compatibility, Innovation, and Coordination across the Supply Chain - 2013
National Research Initiative Grant Program
· Panel Manager – 2000
· Award Panelist – 1994, 1995, 1999
Small Business Innovative Research Grant Program
· Award Panelist – 1996

US Forest Service

National Planning Committee for Forest Products Research (Joint with NAPFSC)
· Past Chair – 1997
· Chair – 1996
· Regional Representative– 1994, 1995
National Biobased Material and Recycling Team
· Session Co-Chair for Wood-Fiber/Plastic Composites Symposium – 1997
· Compiled CRC Manual in Natural Fiber Reinforced Thermoplastic Composites – 1992, 1993
· 1st Wood-Plastic Composites Meeting (now Biannual Event) – 1991

Environmental Protection Agency

Review Panel (Projects on Renewable Building Materials)
· Member – 2006

UNIVERSITY SERVICE

Washington State University

Department, College, University Committees

· Faculty Senate, Distinguished Faculty Address Committee – 2013
· Regent's Professor Nominating Committee – 2012-15
· Anjan Bose Award Committee – 2012
· Civil and Environmental Engineering Group Leader - Structures/Materials/Sustainability – 2009, 2010
· Civil and Environmental Engineering Leadership Team – 2009, 2012, 2013, 2015
· Virtual College of Sustainability and the Environment Committee – 2008
· Intellectual Property Committee – 2007, 2008
CEA Tenure and Promotion Advisory Committee – 2005, 2006, 2012, 2013
· CEA Research Advisory Committee – 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012
· Reviewer for Regents Scholars Program - 2003
· Assoc. Provost for Research Intellectual Property Policy Advisory Committee – 2002, 2003
· Civil and Environmental Engineering Research Committee – 2002
· Graduate Coordinator for Structures Group – 2001, 2002, 2003
· Graduate Studies Committee for CEE – 2001, 2002, 2003
· University Marketing Effort – 2001
· Advanced Technology Initiative, Washington State Legislature – 2000, 2001
· Chair of Louisiana-Pacific Research Endowment – 1999-present
· CEE Space Committee – 1999, 2000
· Interim Director of Wood Materials and Engineering Laboratory – 1997
· Co-Chair of WSU International Particleboard/Composite Materials Symposium – 1996, 1997, 1998, 1999, 2000, 2001, 2002
· Co-Editor of Proceedings for WSU International Particleboard/ Composite Materials Symposium – 1998, 1999, 2000, 2001
· Editor of Proceedings for WSU International Particleboard/Composite Materials Symposium – 1996, 1997
· Academic Steering Committee for Computing and Telecommunications – 1996, 1997

Faculty Mentorship and Evaluation

· Faculty Mentoring Committee (Dr. Ali Hajbabaie) – 2015
· Chair of Faculty Mentoring Committee (Dr. Karl Olsen) – 2013
· Chair of Faculty Mentoring Committee (Dr. Liv Haselbach) – 2009
· Chair of Faculty Mentoring Committee (Dr. Jinwen Zhang) – 2009
· Faculty Mentoring Committee (Dr. Timothy VanReken) – 2009
· Chair of Faculty Mentoring Committee (Dr. Marie Laborie) – 2003
· Faculty Mentoring Committee (Dr. Frank Loge) – 2003
Promotion and Tenure Teaching Review Committee (Dr. David Bahr, MME) – 2006
· Promotion and Tenure Teaching Review Committee (Dr. Frank Loge) – 2003
· Promotion and Tenure Teaching Review Committee (Robert Barnstone, School of Architecture) – 2002
· Faculty Third Year Teaching Review Committee (Dr. Frank Loge) – 2001

Search Committees

· Chair of Search Committee for CMEC-ISD Faculty Position – 2012-13
· Search Committee for Materials Science Faculty Position – 2012
· Search Committee for OGRD Proposal Writer – 2009
· Chair of Search Committee for WMEL-CEE Bio-Polymers Faculty Position – 2002, 2003
· Chair of Search Committee for WMEL-CEE Research & Extension Specialist Wood Composite Materials Faculty Position – 2002
· Search Committee for WSU Research Foundation Licensing Officer – 2002
· Chair of Search Committee for two WMEL-CEE Composite Materials Faculty Positions – 2001, 2002
· Search Committee for Univ. of Idaho Wood Science Department, Wood Composites Faculty – 2000
· Search Committee for Univ. of Idaho Wood Science Department, Products Marketing Faculty – 1998
· Chair of Search Committee for Director of Wood Materials and Engineering Laboratory – 1996, 1997

West Virginia University

Department, College, University Committees

· Chair of Division of Forestry Computer Committee – 1994, 1995
· Division of Forestry Natural Resource Center Committee – 1991, 1992, 1993, 1994, 1995
· College of Agriculture and Forestry Computer Committee – 1991, 1992, 1993
· Division of Forestry Computer Committee – 1990, 1991, 1992, 1993

Search Committees

· Chair of search committee for Wood Chemistry position – 1994, 1995
· Search committee for Forest Harvesting position – 1993, 1994
· APEX search committee for International Trade Specialist position – 1991

INDUSTRIAL RESEARCH AND PRODUCT DEVELOPMENT

The Composite Materials and Engineering Center (CMEC) conducts outreach to assist companies in developing and evaluating various industrial products and processes. In my capacity as a lead composite researcher with CMEC, I have supervised projects for the following companies:

Alberta Research Council
Applied Comp. Technologies
ARCO Chemicals
Bayer Corp.
BioFrontiers Inc.
Boise Cascade Inc.
Borden Resin Corp.
California Cedar Corp.
Dakota West
Dow Chemical
EL Thompson Co
Equistar Chemicals
Evergreen Engineering
Fiber Alternatives
Fiber Composites
Georgia Pacific Resin Corp.
Georgia-Pacific Corp
Gunns Ltd
Halophyte Enterprises, Inc.
Helmitin Adhesive
Honeywell Speciality Chemicals
Indus. Maerera del Oriente
Jeld Wen Corp.
Killian Electric Corp.
Kustom Material Laminators
Lake Agassiz Dev. Corp.
Lignotech
Louisiana-Pacific Corp.
Luzenac America Inc.
Masonite Corp.
McFarland Cascade
Neste Resin Corp.
Pacific Northwest Fiber
Primedoor Inc.
Raute Wood
Rycair Corp.
Shoreline Industries
Siemplekamp Inc.
TeelGRT
Teton West
Timber Products Inc.
US Borax
US Forest Service
WA and ID Wheat Growers
WA Grass Seed Growers
WA Wheat Growers
Weyerhaeuser Corp.