VIKRAM YADAMA
Associate Professor & Extension Specialist

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EDUCATION

Ph.D. Structures, Civil Engineering, December 2002
Washington State University, Pullman, WA
Dissertation: "Characterization and modeling of oriented strand composites"

M.S. Wood Science & Forest Products, June 1990
Virginia Polytechnic Institute & State University, Blacksburg, VA
Thesis: "Experimental Investigation of a Novel Finite Element Model for Southern Pine Glulam Beams"

B.S. Forestry and Forest Management, May 1986
Iowa State University, Ames, Iowa

EXPERTISE

Anisotropic elasticity; mechanics of wood and wood composites; modeling of structure-property relationships of engineered wood composites; wood composites process and product development for structural and nonstructural applications; industrial extension/outreach to wood composites and forest products industry.

PROFESSIONAL WORK EXPERIENCE

08/2013 to present **Associate Professor/Extension Specialist**
Department of Civil and Environmental Engineering
Composite Materials and Engineering Center
Washington State University
Research, outreach, and teaching appointment

08/2007 to 08/2013 **Assistant Professor/Extension Specialist**
Department of Civil and Environmental Engineering
Composite Materials and Engineering Center
Washington State University
Tenure-track position with research, outreach, and teaching appointment

01/2002 to 08/2007 **Assistant Research Professor/Extension Specialist**
Composite Materials and Engineering Center
Washington State University

Responsibilities include developing and overseeing outreach and continuing education activities to the wood composite industry and its clients and conducting wood-based composite research.

08/1998 to 12/2002 **Graduate Research Assistant**
Department of Civil and Environmental Engineering
Washington State University
Ph.D. in Civil and Environmental Engineering

07/1997 to 07/1998 **Research Scientist**
Forest Products Laboratory
Mississippi State University
Responsibilities included research, extension, and teaching position with emphases on engineering design and construction of furniture. Provided technical and outreach support to wood composite industry, furniture manufacturers, and suppliers.

07/1990 to 06/1997 **Senior Research Assistant**
Forest Products Laboratory
Mississippi State University
Responsibilities included research, extension, and teaching position with emphases on engineering design and construction of furniture. Provided technical and outreach support to wood composite industry, furniture manufacturers, and suppliers.

12/1988 to 06/1990 **Research Assistant II**
Forest Products Laboratory
Mississippi State University
Research position with emphases on furniture design, testing, and analyses

08/1986 to 11/1988 **Graduate Research Assistant**
Department of Wood Science and Technology
Virginia Polytechnic Institute & State University
M.S. in Wood Science and Forest Products

07/1985 to 08/1985 **Student Intern**
Seshasayee Paper and Boards Ltd
Tamilnadu, India
Trained and assisted in pulp and paper manufacturing divisions

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TEACHING & ADVISING – *Summary*

- Long-term educational goal is to prepare new generation of engineers cognizant of sustainable building materials from lignocellulosic fibers and equipped with the knowledge to design and manufacture bio-based composite products for targeted building applications and non-structural applications.
- Taught material and engineering courses over a span of 25 years. Primary teaching interests are in material characterization (wood and natural fibers), processing (parameters for synthesis of wood composites, natural fiber thermoplastic composites), modeling (wood mechanics, engineering design of furniture, applications of short fiber

and layered composite theories for wood composite design and evaluation), conversion to composite products (engineered wood composites and natural fiber thermoplastic composites), and advanced mechanics of materials.

- Classes are composed of students from varying backgrounds including Forest Products, Civil Engineering, Material Science and Engineering, Mechanical Engineering, and Biological Systems Engineering.
- Incorporated research-based teaching through focused projects and presentations mixed with lectures. Students presented results of a research project at two professional conferences.
- Invited guest lecturer at College of Material Science and Technology, Beijing Forestry University (one 2-hr lecture to undergraduates and two 2-hr lectures to graduate students)
- Engaged high school, undergraduate, and graduate students as research team members in NSF CAREER, NSF REU Program, and other research projects.
- Director of NSF Center for Bioplastics and Biocomposites REU Program administered from WSU and collaborating with Iowa State University.
- Major professor to 7 doctoral and 16 MS students. Also, served or serving on several advisory committees for graduate students (14 PhD and 29 MS) from Departments of Civil and Environmental Engineering, Mechanical and Materials Engineering, Material Science and Engineering Program, and Biological Systems Engineering at WSU.
- Mentored two Post Docs and 14 undergraduate students conducting research and served as an advisor and mentor to visiting doctoral students from Laval University, Canada, and Northwest A & F University, China.

RESEARCH & PUBLICATIONS – *Summary*

- Primary research interests are in the area of characterization of wood and natural fibers for composites' processing and manufacturing, modeling of lignocellulosic composites, efficient utilization of low-value woody biomass to produce novel composite products, integration of technologies, and applications of lignocellulosic composites for energy efficient building construction.
- Research also values and emphasizes economic development of rural communities by focusing on developing or transferring technologies that use *local* materials in *local* manufacturing facilities to make products for *local* markets.
- Demonstrated how low-value biomass can be processed into strand-based thin-veneers for downstream conversion into variety of composites for applications such as building envelopes, fruit and vegetable packaging, shipping containers, furniture and cabinetry. Thin-strand veneer technology has led to the development of profiled wood-strand composites (3-D core) that are lightweight and possess high specific strength and stiffness.
- Currently researching the fundamental science of continuous and semi-continuous thermoforming profiled composites using wood-strands. Advantages include significant reduction in resin consumption (which accounts for over 30 percent of the product cost), material usage (by over 50 percent), and drying energy consumption and emissions due to processing strands with relatively high moisture content during the consolidation process.

- Developing an understanding of liquid molding of wood strand and natural fiber panels for automotive and architectural/decorative applications.
- Collaborated with researchers across the disciplines and universities. For example, in a collaborative project with the State University of New York is exploring hot-water extraction processes that can be integrated into wood composite plants to produce methanol, acetic acid, and biopolymers. Removal of hemicelluloses during the hot water extraction reduces the hygroscopicity of the residual biomass, which can be then converted into more durable composites. Five refereed journal articles have been published as a result of this collaboration. Submitted several collaborative grants and written several publications with faculty at the University of Auckland, New Zealand.
- Directly responsible, as PI or Co-PI, for over $5.1 million in sponsored research projects funds from various agencies including USDA NIFA, NSF, and USDA FS.
- Published 45 refereed journal articles, one book chapter, and 9 peer reviewed conference proceedings and extension publications.
- Delivered 25 invited scientific presentations, including a keynote presentation "*Development of wood-strand composites for structural applications*," at 19th International Symposium on Processing and Fabrication of Advanced Materials (PFAM XIX), Auckland, New Zealand.
- Authored or coauthored of over 80 technical presentations at national and international scientific conferences and seminars.
- Recipient of 2012 NSF CAREER award *"CAREER: Development of high-performance lignocellulosic composites for building envelopes: Authentic learning about sustainable materials through research-based inductive approach."* Major accomplishments thus far include: 1) development of an analytical model to design 3D wood strand cores for sandwich panels to achieve desirable stiffness while considering the serviceability aspects, 2) verification and validation of the model, and 3) fabrication of an aluminum compression mold to hot-press a 3D core. Full-size (4ft by 8ft) sandwich panels will be tested and evaluated for their structural and hygrothermal performance.
- Panel Manager, USDA/NIFA SBIR Program, Forests and Related Resources, 2017-2019
- Served on several NSF and USDA NIFA award review panels and ad hoc reviewer for several other grant programs including Swiss NSF.

OUTREACH/EXTENSION – *Summary*

- Site-Director, Center for Bioplastics and Biocomposites (www.cb2.wsu.edu), Collaborative NSF Industry University Cooperative Research Center (I/UCRC) between Washington State University and Iowa State University that focuses on developing high-value biobased products from agricultural and forestry feedstocks.
- Co-investigator and **Outreach/Extension Team leader** for a $40 million USDA funded project *"The Northwest Advanced Renewables Alliance (NARA): A New Vista for Green Fuels, Chemicals, and Environmentally Preferred Products (EPPs)* (had direct control of ~$1.25 million). As the Outreach Team leader, I was responsible for producing 12 webinars, developing and maintaining a dynamically searchable repository of scientific knowledge on wood-based biofuels and co-products (www.woodtobiofuels.org),

interactive online timeline archiving the story of 1000-gallons of biojet fuel production consumed by the first cellulosic demonstration flight from Seattle to Washington DC, 31 infographics and factsheets, five refereed journal articles resulting from doctoral work by Rui Zhu under my supervision on thermal treatment of wood, and several professionally produced videos to inform public regarding the project and its impacts. The objectives of media production were to convey the story of producing biofuels from forest residuals, provide a 30,000 ft view of the process and its sustainability metrics for stakeholders, create educational digital assets/tools for K-12 and college students, and capture stakeholder perceptions (https://nararenewables.org/documents/2017/06/informing-and-engaging-stakeholders.pdf/).

The outcomes of the outreach and engagement in NARA were a broad regional stakeholder community investigating aviation biofuel and co-product development, broadening of public understanding and awareness of biofuel and co-product potential, initiating main stream conversation at regional biomass and biofuel coalition groups, and advancing the conversation from "Is it possible?" to "How do we implement a wood-to-biofuels supply chain?"

- Developed a wood-strand substrate that provides competitive advantage by improving the quality of furniture, a potential substrate for the furniture industry in the western region of the US valued at over $5.9 billion (nationally valued over $44 billion).
- Developed novel lightweight wood-strand sandwich panel technology weighing 50 percent less and reducing fiber and resin consumption by over 50 and 40 percent compared to currently available commercial sheathing panels. Ongoing research in advancing the science of sustainable buildings through new design concepts, such as panelized systems for residential building construction, using wood-strand sandwich panels. Thermoforming of these 3D panels with thin-walls can be incorporated into existing plants, adapting to changing resources and catering to high value niche markets.
- Collaborating with start-up companies in developing natural fiber composites manufacturing protocols and establishing performance specifications. Secured internal funding (WSU OC Gap Funding) to scale up affordable production of natural fiber composite panels for architectural/decorative panels. This work is in collaboration with Formology, an Oregon based company manufacturing decorative panels from wood and natural fiber waste streams.
- Facilitate industry-university cooperative research as Site-Director of the Center for Bioplastics and Biocomposites, a NSF I/UCRC. Iowa State University and WSU are the partnering universities in this collaborative center. The vision of the center is to develop the knowledge that will allow the production of an array of high-value products, including plastics, coatings, adhesives, and composites, from agricultural feedstocks that are compatible with current industrial manufacturing systems and thereby promoting rural development. More information about center's vision and goals can be found at www.cb2.wsu.edu. Currently the center has 22 members.
- Collaborated or assisted over 24 companies in the state of Washington, over 15 in the U.S., and over 8 internationally.
- Organized and co-chaired 24 symposia and technical workshops since 2003, which were attended by 3,287 attendees and generated total revenues of over $936K.

- Co-chaired the International Wood Composites Symposium for 14 years (www.woodsymposium.wsu.edu). This symposium is attended by hundreds of participants from over 15 countries. WA-based companies that have directly benefited from this symposium include Weyerhaeuser, Pacific WoodTech, Olympic Panel Producers, TSI, Globe Machine Manufacturing, Potlatch, Lynden Door, NewWood, Sisalwood, TrussCore, Huntwood, and Canyon Creek.
- Co-chaired the 1st and 2nd Northwest Wood-Based Biofuels + Co-Products Conference, Seattle, WA, 2014 and 2016. Attended by 380 stakeholders from 24 states and 6 countries. Participants included forest products, chemical, and aerospace industries, state and federal agency personnel, researchers and students, economic development personnel, NGOs, and consultants.
- The Consortium for Research on Renewable Industrial Materials (CORRIM) Special Issue Editor, *Wood and Fiber Science*, Volume 42, 2010.
- Assisted Dieffenbacher, a German based equipment manufacturing company, establish an office in India. As a result of this assistance, Dieffenbacher sold two continuous presses to producers resulting in total sales of 30-35 million Euros.
- Provided technical consulting on production of specialty wood-strand composite panels to Coillte, Ireland. Coillte owns over one million acres of land in Ireland and its businesses include MDF and OSB manufacturing facilities.
- Invited contributor to The Medite 2016 Compendium, the first output of the Medite 2016 Forum, London, UK November 2, 2006. The Forum facilitated exchange of ideas and views on issues to shape the future of the timber industry both in Europe and globally.
- Developed a web resource site for wood plastic composite technical information (www.wpcinfo.org) and conversion of wood to biofuels (www.woodtobiofuels.org) used by economic development officials, entrepreneurs and companies throughout Washington and beyond; developed a web resource that maps all the forest products industries in the state of Washington.
- Served as officer (Secretary, Vice-Chair, Chair, Board Member, and Liaison) of technical committees in professional organizations (Forest Products Society and the Society of Wood Science and Technology).

HONORS AND AWARDS

NSF CAREER Grant recipient, 2012-2017

First Place, Wiley Research Exposition Engineering/Physics Student Research & Presentation, Washington State University, 2001-2002

Suksdorf Fellowship Award, Washington State University, 2000

Plywood Pioneers Association Scholarship, 2000 and 2001

G. B. MacDonald Memorial Senior Leadership Award for Advanced Studies, Iowa State Univ., 1986

Outstanding Senior Award, Iowa State Univ., 1986

Awards Received by My Students:

- Sudip Chowdhury, Third Place Student Poster Competition, 2005 Society of Wood Science and Technology Annual Meeting, Quebec City, Canada.
- Nels Peterson, First Place Student Presentation, 2008 NW Forest Products Academic Forum, Seattle, WA.

REFEREED JOURNAL ARTICLES

(*indicates students advised; **indicates visiting doctoral student supervised)

1. *Mohammadabadi, M., **V. Yadama**, L. Yao, D. Bhattacharyya. 2018. Low-velocity impact response of wood-strand sandwich panels and their components. *Holzforschung*, 72(8):681-689. (Impact Factor = 2.079).
2. *Mohammadabadi, M., **V. Yadama**, and *J. Geng. 2018. Creep behavior of 3D core wood-strand sandwich panels. *Holzforschung*, 72(6):513-519. (Impact Factor = 2.079).
3. *Zhu, R., **V. Yadama.** 2018. Isolation and characterization of cellulose micro/nanofibrils from Douglas Fir. *Journal of Polymers and the Environment*, 26(3):1012-1023. (Impact Factor = 1.971)
4. *Zhu, R., **V. Yadama**, Liu, H., Lin, R., and Harper, D.P. 2017. Fabrication and characterization of Nylon 6/cellulose nanofibrils melt-spun nanocomposite filaments. *Composites. Part A, Applied Science and Manufacturing*, 97(June):111-119. (Impact Factor = 4.514)
5. *Zhu, R., **V. Yadama**. 2016. Effects of hot water extraction (HWE) of Douglas fir as a pre-process for the sulfite pretreatment to overcome recalcitrance of lignocellulose (SPORL). *Holzforschung*, 71(2):91-98. (Impact Factor = 2.079)
6. *Zhu, R., **V. Yadama**. 2016. Effects of Hot Water Extraction (HWE) Pretreatment on Compositional and Physicochemical Changes of Douglas Fir. *Biomass and Bioenergy*, 90:78-89. (Impact Factor = 3.358)
7. *Pelaez-Samaniego, R., **V. Yadama,** M. Garcia-Perez, E. Lowell, R. Zhu, and K.R. Englund. 2016. Interrelationship between lignin-rich dichloromethane extracts of hot water-treated wood fibers and high-density polyethylene (HDPE) in wood plastic composite (WPC) production. *Holzforschung, 70(1):31-38.* (Impact Factor = 2.079)
8. *Pelaez-Samaniego, R., **V. Yadama,** M. Garcia-Perez, E. Lowell. 2015. Abundance and characteristics of lignin liquid intermediates in wood (Pinus ponderosa Dougl. Ex Laws) during hot water extraction. *Biomass and Bioenergy,* 81:117-128. (Impact Factor = 3.358)
9. *Voth, C., N. *White, **V. Yadama**, W. Cofer. 2015. Design and evaluation of thin-walled hollow-core wood-strand sandwich panels. *Journal of Renewable Materials*, 3(3):234-243. (Impact Factor = 0.986)
10. *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*, 34(15):1241-1252. (Impact Factor = 1.471)
11. **Yadama, V**. and M.P. Wolcott. 2015. Application of Fiber Undulation Model to Predict Oriented Strand Composite Elastic Properties. *Journal of Renewable Materials*, 3(3):216-223. (Impact Factor = 0.986)

12. *Qi, C., V. Yadama, K. Guo, and M.P. Wolcott. 2015. Thermal Stability and Degradation Simulation of Sweet Sorghum during Hot Pressing Process of Composites. *Industrial Crops and Products*, 69:335-343. (Impact Factor = 3.849)
13. *Pelaez-Samaniego, R., **V. Yadama,** M. Garcia-Perez, E. Lowell, and A. McDonald. 2014. Effect of temperature during wood torrefaction on the formation of lignin liquid intermediates. *Journal of Analytical and Applied Pyrolysis,* 109:222-233. (Impact Factor = 3.468)
14. *Pelaez-Samaniego, R., **V. Yadama,** M. Garcia-Perez, E. Lowell, and T. Amidon. 2014. Effect of hot water extraction on particleboard produced from hardwood and softwood. *Holzforschung,* 68(7):807-815. (Impact Factor = 2.079)
15. *Pelaez-Samaniego, R., **V. Yadama,** E. Lowell, and R. Espinoza-Herrera. 2013. A review of wood thermal pretreatments to improve wood composite properties. *Wood Science and Technology,* 47(6):1285-1319. (Impact Factor = 1.706)
16. *Qi, C., **V. Yadama**, K. Guo, M.P. Wolcott. 2013. Thermal conductivity of sorghum and sorghum-thermoplastic composite panels. *Industrial Crops and Products,* 45:455-460. (Impact Factor = 3.849)
17. *Wang, Y., **V. Yadama** and D. Bhattacharyya. 2013. Profile forming of pre-pressed wood-strand preforms. *Composites Part A*, 46: 131-139. (Impact Factor = 4.514)
18. Alam, M.A., **V. Yadama**, W.F. Cofer, K.R. Englund. 2013. Analysis and evaluation of a fruit bin for apples. *Journal of Food Science and Technology,* 51(12):3722-3730. (Impact Factor = 1.797)
19. *Pelaez-Samaniego, R., **V. Yadama,** E. Lowell, T. Amidon and T.L. Chaffee. 2012. Hot water extracted wood fiber for production of wood plastic composites (WPCs). *Holzforschung*, 67(2):193-200. (Impact Factor = 2.079)
20. **Yadama, V**., E. Lowell and *C. Langum. 2012. Characterization of wood strands from young, small-diameter Douglas-fir and western hemlock trees. *Wood and Fiber Science,* 44(1):1-10 (Impact Factor = 0.75)
21. **Barbuta, C., P. Blanchet, A. Cloutier, **V. Yadama** and E. Lowell. 2012. OSB as substrate for Engineered Wood Flooring. *Holz Als Roh- Und Werkstoff,* 70(1-3):37-43. (Impact Factor = 1.401)
22. Liu, X., *Y. Wang, *Y. Cao, **V. Yadama,** M. Xian and J. Zhang. 2011. Study of dextrin-derived curing agent for waterborne epoxy adhesive. *Carbohydrate Polymers.* 83(3):1180-1184. (Impact Factor = 5.158)
23. *Chowdhury, S., **V. Yadama** and M-P. Laborie. 2011. Reactive maleic anhydride polyolefins (MAPOs) in oriented strand board. Part 1. Dynamic themomechanical properties of phenol formaldehyde resins blended with two MAPOs. *Holzforschung,* 65(1):81-87. (Impact Factor = 2.079)
24. *Chowdhury, S. and V. **Yadama**. 2011. Reactive maleic anhydride polyolefins (MAPOs) in oriented strand board. Part 2: Influence on physical and mechanical properties. *Holzforschung,* 65(1):89-96. (Impact Factor = 2.079)
25. **Barbuta, C., P. Blanchet, A. Cloutier, **V. Yadama** and E. Lowell. 2011. Tailor made OSB for special application. *Holz Als Roh- Und Werkstoff,* 69(4):511-519. (Impact Factor = 1.401)

26. *Michael, S.G., **V. Yadama**, V. and D. A. Bender. 2010. Effect of tie-layer on the bond strength between thermoplastic and borate treated wood-substrate. *Wood and Fiber Science,* 42(4):419-428. (Impact Factor = 0.75)
27. *Wang, Y., **V. Yadama**, M-P. Laborie and D. Bhattacharyya. 2010. Cure Kinetics of PF/PVAc Hybrid Adhesive for Manufacturing Profiled Wood-Strand Composites. *Holzforschung,* 64(5): 603-608. (Impact Factor = 2.079)
28. *Langum, C., **V. Yadama** and E. Lowell. 2009. Physical and mechanical properties of young-growth Douglas-fir and Western hemlock from western Washington. *Forest Products Journal*. 59(11-12):37-47. (Impact Factor = 0.488)
29. Ruffing, T. C., N. R. Brown, **V. Yadama**, J. S. Cionni, T. Takah, T. S. McCracken and W. J. Nicola. 2009. Effect of Maleic anhydride polypropylene co-polymer addition on the physical and mechanical properties of pMDI bonded OSB panels. *Forest Products Journal*. 59(10):47-51. (Impact Factor = 0.75)
30. **Yadama, V**., E. Lowell, *N. Peterson and D.L. Nicholls. 2009. Wood-thermoplastic composites manufactured using beetle-killed spruce from Alaska. *Polymer Engineering and Science*, 49(1):129-136. (Impact Factor = 1.551)
31. *Weight, S. and **V. Yadama**. 2008. Manufacture of laminated strand veneer (LSV) composite. Part 1: Optimization and characterization of thin strand veneers. *Holzforschung*, 62(6):718-724. (Impact Factor = 2.079)
32. *Weight, S. and **V. Yadama**. 2008. Manufacture of laminated strand veneer (LSV) composite. Part 2: Elastic and strength properties of laminate of thin strand veneers. *Holzforschung*, 62(6):725-730. (Impact Factor = 2.079)
33. **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. (Impact Factor = 0.75)
34. **Yadama, V**., M. P. Wolcott, and L. Smith. 2006. Elastic Properties of Wood-Strand Composites with Undulating Strands. *Composites Part A*, 37:385-392. (Impact Factor = 4.514)
35. **Yadama, V**. and M. P. Wolcott. 2006. Elastic Properties of Hot Pressed Aspen Strands. *Wood and Fiber Science*, 38(4). (Impact Factor = 0.75)
36. **Yadama, V**. and S. Shook. 2005. Wood-Plastic Composite Extrusion Technology for Sustainable Economic Development of Local Communities. *Understanding Barriers and Opportunities for Sustainable Wood Production in the Pacific Northwest*, PNW Research Station General Technical Report PNW-GTR-626, Portland, Oregon.
37. **Yadama, V**., J. Zhang, B. M. Syed, and P. H. Steele. 2002. Experimental analysis of multiple staple joints in selected wood and wood-based materials. *Journal of Testing and Evaluation*. JTEVA, Vol. 30, No. 5, pp. 400-407. (Impact Factor = 0.669)
38. Zhang, J., **V. Yadama**, F. Quin, and D. Lyon. 2002. Resistance of southern yellow pine to direct withdrawal of staples. *Forest Prod. J.* 52(9): 75-81. (Impact Factor = 0.488)
39. Harless, T. E., F. G. Wagner, P. H. Steele, F. W. Taylor, **V. Yadama**, and C. W. McMillin. 1991. Methodology for locating defects within hardwood logs and determining their impact on lumber-value yield. *Forest Prod. J*., 41(4):25-30. (Impact Factor = 0.488)

40. Bullard, S. H. and **V. Yadama**. 1991. Optimal width and depth for maximum breaking load of wood beams. *Resource Management and Optimization,* 8(2):67-72.
41. **Yadama, V**., J. F. Davalos, J. R. Loferski, and S. M. Holzer. 1991. Selecting a gauge length to measure parallel-to-grain strain in southern pine. *Forest Prod. J*., 41(10):65-68. (Impact Factor = 0.488)
42. **Yadama, V**., B. M. Syed, P. H. Steele, and D. E. Lyon. 1991. Effects of leg penetration on the strength of staple joints in selected wood and wood-based materials. *Forest Prod. J*., 41(6):15-20. (Impact Factor = 0.488)
43. Davalos, J. F., J. R. Loferski, S. M. Holzer, and **V. Yadama**. 1991. Transverse isotropy modeling of 3-D glulam timber beams. *J. of Materials in Civil Engineering*, 3(2):125-139. (Impact Factor = 1.763)
44. Steele, P. H., **V. Yadama**, and F. W. Taylor. 1990. Moisture content variation of lumber processed at roughmills. *Forest Prod. J*., 40(11/12):19-24. (Impact Factor = 0.488)
45. Loferski, J. R., J. F. Davalos, and **V. Yadama**. 1989. A laboratory-built clip-on strain gauge transducer for testing wood. *Forest Prod. J*., 39(9):45-48. (Impact Factor = 0.488)

BOOK CHAPTER

Lowell, E., **Yadama, V**., Schimleck, L.R., & Skog, K.E. 2017. Next-Generation Products and Greenhouse Gas Implications. In Deanna H. Olson and Beatrice Van Horne (Eds.), *People, Forests, and Change - Lessons From the Pacific Northwest* Island Press. (ISBN-13: 978-1610917674)

REFEREED CONFERENCE PROCEEDINGS AND EXTENSION PUBLICATIONS

(*indicates a student advised by V. Yadama)

1. USDA. 2017. *Wood to Wing: The Economics of a Wood-based Biorefinery in Longview, Washington*. NARA Brochure produced by PNW Research Station, Portland, OR.
2. USDA. 2017. *Wood to Wing: Environmental Effects of Using Postharvest, Residual Biomass to Produce Wood-Based Jet Fuel*. NARA Brochure produced by PNW Research Station, Portland, OR.
3. Berg, E., Brooks, R., Burke, C., Englund, K., Gaffney, M., Hougham, R.J., Kern, M…. & **Yadama, V**. 2017. *Informing and engaging stakeholders*. NARA Final Reports. Pullman, WA. Northwest Advanced Renewables Alliance.
4. *White, N., *C. Voth, and **V. Yadama.** 2015. *Wood-strand sandwich panels for panelized construction*. Proceedings of the First International Conference on Bio-Based Building Materials, 22-24 June, Clermont-Ferrand, France.
5. *Garg, A., **V. Yadama**, and W.F. Cofer. 2014. *Optimization of Sandwich Panel Parameters for Enhanced Structural Performance using Homogenization Methodology*. Proceedings of the American Society for Composites: 29th Technical Conference, pp 12p. 29th Technical Conference of American Society for Composites, La Jolla, CA.
6. Barbuta, C., P. Blanchet, A. Cloutier, **V. Yadama,** J. Deteix, A. Fortin, and E. Lowell. 2011. *Development of an OSB substrate for engineered wood flooring: A project overview*, In Proceedings: *International Scientific Conference on Hardwood Processing 2011 (*ISCHP3 2011), 17-19 October, Virginia Tech, Blacksburg, VA.
7. Rao, S., **V. Yadama,** and D. Bhattacharyya. 2011. *Composite hollow core high-end bio-panels*, In Proceedings: 18th International Conference on Composite Materials, August

21-25, 2011, Jeju Island, South Korea.

8. **Yadama, V**., *S. Weight, and *C. Voth. 2011. *Development of wood-strand composites for structural applications*. In Proceedings: 19th International Symposium on Processing and Fabrication of Advanced Materials (PFAM XIX), January 14-17, 2011, Auckland, New Zealand.
9. *Wang, Y., **V. Yadama,** D. Bhattacharyya, *Y. Cao, and M-P. Laborie. 2011. *Curing behavior of PF/PVAc hybrid adhesive and its interaction with wood*. In Proceedings: 19th International Symposium on Processing and Fabrication of Advanced Materials (PFAM XIX), January 14-17, 2011, Auckland, New Zealand.
10. Taylor, A., **V. Yadama**, K. Englund, D. Harper, and J. Kim. 2008. *Wood Plastic Composites – A Primer.* University of Tennessee Extension Publication PB 1779, University of Tennessee, Knoxville, TN, pp 10.
11. **Yadama, V**., M.P. Wolcott. 2007. *Influence of structure on the elastic behavior of engineered strand composites.* In Paolo Feraboli and Patrick Stickler (Eds.), *Proceedings of the American Society for Composites,* 22nd American Society for Composites Conference, Seattle, WA.
12. **Yadama, V**. and M. P. Wolcott. 2004. *Effects of Hot Pressing on Properties of Aspen Strands*. In Proceedings of the 7th Pacific Rim Bio-Based Composites Symposium, Nanjing, China.

INVITED PRESENTATIONS & PUBLICATIONS

1. **Yadama, V**. 2016. *All About the Lignocellulosic Materials*. Faculty and Students at Beijing Forestry University's College of Material Science and Technology, October 20, Beijing, China. (***Presentation)***
2. **Yadama, V**. 2016. *Aspects of wood structure that influence wood-based composites' behavior*. Undergraduate Students at Beijing Forestry University's College of Material Science and Technology, October 19, Beijing, China. (***Presentation)***
3. **Yadama, V**. 2016. *Lignocellulosic Composite Materials: Material Description & Short Fiber Composites*. Graduate Students at Beijing Forestry University's College of Material Science and Technology, October 20, Beijing, China. (***Presentation)***
4. **Yadama, V**. 2016. *Composites, Biofuels, and Co-Products from Lignocellulosic Materials*. International Center for Bamboo and Rattan, October 21, Beijing, China. (***Presentation)***
5. **Yadama, V**. 2015. *Siting of Processing Facilities for Wood-To-Biojet Conversion in Oregon*. 77th Oregon Logging Conference, Eugene, OR, February 19-21. (***Presentation)***
6. Burke, C., S. Leavengood, and **V. Yadama**. 2015. Using slash piles to make chemical products: an update on the Northwest Advanced Renewables Alliance (NARA) activities. *The Western Forester*, Jan/Feb, pp 7-9. (***Publication***) (http://www.forestry.org/northwest/westernforester/2015/)
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8. **Yadama, V**. 2013. *Using Biomass to Create Jet Fuel*. 21st Annual Family Foresters Workshop, Coeur d'Alene, Idaho. (***Presentation***)
9. **Yadama, V**. 2013. *From Sticks to Jet-Stream: Using logging slash to create jet fuel*.

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10. **Yadama, V**. 2013. *NARA – Northwest Advanced Renewable Alliance Biomass to Biofuel.* Montana Economic Development Association (MEDA), Hamilton, MT. (***Presentation***)
11. **Yadama, V**. 2013. *Cascade to Pacific (C2P): Wood-based Biofuels Supply Chain Analysis*. Oregon Forest Biomass Working Group Meeting, Salem, OR. (***Presentation***)
12. **Yadama, V**. 2013. *Cascade to Pacific (C2P): Wood-based Biofuels Supply Chain Analysis*. Lewis Economic Develop Council's General Membership Meeting, Chehalis, WA. (***Presentation***)
13. **Yadama, V**., *M. R. Pelaez-Samaniego, E. Lowell, and T. Amidon. 2012. *Integration of hot-water extraction into wood composite manufacturing process for value-added products*. International Conference on the Future of Panel Industry – Challenges and Key Issues, Bangalore, India, September 26-28. (***Lead Speaker*** *in Technological Innovation and Value Addition Session*)
14. **Yadama, V**., *S. Weight, and *C. Voth. 2011. *Development of wood-strand composites for structural applications.* Processing and Fabrication of Advanced Materials – XIX (PFAM 19), Auckland, NZ, January 14-17. (***Keynote***)
15. **Yadama, V**. 2010. CARB 2 set for global impact. *Wood Futures – Timber Trades Journal,* December 25. (***Publication***)
16. **Yadama, V**. 2010. *Opportunities to utilize low-value biomass*. In: Conference Session "Biomass, Fiber, and Carbon – Oh My! Current Research in the Pacific Northwest." Wood Tech Show, Portland, Oregon, March 9-10. (***Presentation***)
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19. **Yadama, V**., E. Lowell, and D.L. Nicholls. 2007. *Emerging Industry Potential on the Kenai: Is Wood/Plastic Composite Technology an Opportunity for Alaska?* All Lands All Hands Meeting, Alaska Region USFS, Soldotna, Kenai Peninsula, Alaska, July 18. (***Presentation***)
20. **Yadama, V**., T. Helmer. 2007. *Wood-based panel industry in India.* European Panel Federation Annual Report, 2006-2007 (***Publication***)
21. **Yadama, V**. 2006. *Moving forward with wood composites*. 49th Annual Convention Society of Wood Science and Technology, Newport Beach, CA, USA (***Presentation)***
22. **Yadama, V**. 2006. *Wood-plastic composite extrusion technology: A value-added opportunity for India*. Indian Plywood Industries Research and Training Institute (IPIRTI), Bangalore, India, February 15. (***Presentation***)
23. **Yadama, V**. 2006. *Shrinking World and Expanding Markets.* Peter Travis (Editor). The Medite 2016 Compendium, London, UK. (***Publication***)
24. **Yadama, V**. 2005. *Seedling to Wood Composites: Why Should We Work Together?* Forestry and Natural Resources Graduate Seminar Series, Purdue University, West Lafayette, Indiana, April 19. (***Presentation***)

25. **Yadama, V**. and S. Shook. 2004. *Wood-Plastic Composites: A Viable Option for Small-Diameter Timber*. SmallWood 2004 Conference, Sacramento, CA (***Presentation***)

OTHER PUBLICATIONS & CONFERENCE PRESENTATIONS

(*indicates a student advised by V. Yadama)

1. *Gartner, B., *Yang, W., and **Yadama, V.** 2018. Resin transfer molding of bio-based composite panels. 18th Annual SPE Automotive Composites Conference & Exhibition, Novi, MI, Sept. 5-7.
2. *Mohammadabadi, M., Bowie, J., *Geng, J., and **Yadama, V.** 2018. Time-dependent behavior of wood-strand sandwich panels with 3-D core. 2018 Forest Products Society International Convention, Madison, WI, June 11-14.
3. *Mohammadabadi, M., *Jarvis, J., **Yadama, V.**, and Cofer, W. 2018. Modeling and designing of a wood-strand sandwich panel with a bidirectional corrugated core. 2018 Forest Products Society International Convention, Madison, WI, June 11-14.
4. *Mohammadabadi, M., **Yadama, V.**, Bowie, J., and *Geng, J. 2018. Performance investigation of wood-strand sandwich panels with bidirectional corrugated core as a sheathing material. 2018 Conference of Engineering Mechanics Institute (EMI 2018), Cambridge, MA, May 29 – June 1.
5. **Yadama, V**. 2017. Bioproducts Research at Washington State University. Webinar sponsored by University Industry Demonstration Project, December 6.
6. *Mohammadabadi, M., *Jarvis, J., and **Yadama, V**. 2017. Strategic improvement of a 3D wood strand core for applications in building envelopes. SEI Structures Congress 2017, Denver, CO, April.
7. **Yadama, V**. 2016. What is CLT & Mass Timber Construction?. Wood Composites Symposium at The International Woodworking Fair, Atlanta, August 23.
8. *Jarvis, J., *Mohammadabadi, M., *White, N., *Voth, C., **Yadama, V**. 2016. Wood-Strand Sandwich Panels for Building & Transportation Applications. IUFRO Asia-Oceania Conference - Innovation in the Panel Industry: Outlook and Concerns, October 26, Beijing, China.
9. **Yadama, V**. 2015. Web-based portals for dissemination of research-based findings to stakeholders on wood-to-biofuel conversion. Technical Poster Presentation, National Extension Energy Summit: Climbing Toward Energy Sustainability, Seattle, WA, April 7-10.
10. *Pelaez-Samaniego, M.R., **V. Yadama**, *R. Zhu, M. Garcia-Perez, E. Lowell, and K.R. Englund. 2014. Contribution of lignin to the rheology of wood plastic composites produced with hot water extracted wood. 68th Forest Products Society International Convention, Quebec City, Canada.
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12. **Yadama, V**., *A. Garg, and W.F. Cofer. 2014. Analytical modeling and finite element analysis of lignocellulose-based corrugated sandwich panels. 68th Forest Products Society International Convention, Quebec City, Canada.
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Paper Research, Medellin, Columbia.

14. *Yang, W. and **Yadama, V**. 2014. Resin Transfer Molding (RTM) of Wood-strand Reinforced Composite Panels. 48th International Wood Composites Symposium, Seattle, WA.
15. *Zhu, R. and **Yadama, V**. 2014. Isolation and characterization of cellulose nanofibrils (CNFs) from HWE treated Douglas-fir – preliminary study. Northwest Wood-Based BioFuels + Co-Products Conference, Seattle, WA.
16. *Pelaez-Samaniego, M.R., **Yadama, V**., Garcia-Perez, M., Lowell, E., and Amidon, T. 2014. Abundance and properties of lignin on hot water extracted wood surface and impact on the production of bioproducts and biofuel. Northwest Wood-Based Biofuels + Co-Products Conference, Seattle, WA.
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18. **Yadama, V**. 2013. Overview Talk: Community Engagement in the Pacific Northwest to Facilitate Development of Biofuels and Co-Products Supply Chain. 2013 NARA Annual Meeting, Corvallis, OR.
19. **Yadama, V**. 2013. NARA's Outreach Efforts in Promoting Biofuel Infrastructure in the Pacific Northwest. AAIC 25th Anniversary Meeting on New Crops: Bioenergy, Biomaterials, and Sustainability, Washington DC.
20. *Zhu, R., **Yadama, V**., and Englund, K.R. 2013. From Wood to Wing: NARA Works to Harness Woody Biomass for Aviation Biofuel. 2013 Small Log Conference, Coeur d'Alene, ID.
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22. *Zhu, R., and **Yadama, V**. 2013. Impact of hot water extraction (HWE) pretreatment conditions on the physiochemical characteristics of Douglas-fir (DF) wood chips. 2013 NARA Annual Meeting, Corvallis, OR.
23. *Pelaez-Samaniego, M.R., **V. Yadama**, E. Lowell, T. Amidon and T.L. Chaffee. 2012. Effect of hot-water extraction on wood-plastic composite products. Presented at the 66th International Convention, Forest Products Society, Washington DC.
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25. *Qi, C., M.P. Wolcott, and **V. Yadama**. 2012. Thermal behaviors of natural fiber-thermoplastic composites. Presented at the 66th International Convention, Forest Products Society, Washington DC.
26. *Wen, X., **V. Yadama**, K. Englund and V. Barber. 2012. Performance of extruded wood plastic composites from fire-killed black spruce and blends of virgin and recycled polyolefin. Technical Poster Presentation at the 66th International Convention, Forest Products Society, Washington DC.
27. Lowell, E., T. Amidon, T. Chaffee, and **V. Yadama**. 2011. Converting low value forest biomass to higher value by-products using a hot water based biorefinery concept, Pacific West Biomass Conference and Trade Show, Jan 10-12, 2011, Seattle, WA.
28. *Wang, Y., **V. Yadama**, D. Bhattacharyya, *Y. Cao and M-P. Laborie. 2011. Curing

behavior of PF/PVAc hybrid adhesive and its interaction with wood, Presented at the International Conference of Processing and Fabrication of Advanced Materials – XIX (PFAM 19), Auckland, NZ.

29. **Yadama, V**. (2011). A bio-jet case for the Pacific Northwest, Global to Local: Fostering Integrated Collaborative Research and Outreach, All CAHNRS and Extension Faculty Conference, Oct 4-6, Pullman, WA.
30. Lowell, E., T. Amidon, T. Chaffe, and **V. Yadama**. 2011. Higher Value By-products from Forest Biomass Using a Hot Water Based Biorefinery Concept, Forest Products Society 65th International Convention, June 19-21, 2011, Portland, OR.
31. **Yadama, V**. and T. Amidon. 2010. Utilization of hot-water extracted wood fiber for reconstituted products – potential for integration of technologies to produce value-added chemicals to composites. *EUEC 2010 Proceedings,* Energy, Utility, and Environment Conference 2010, Phoenix, AZ.
32. *Cameron, T., K.R. Englund, **V. Yadama**, and V. Barber. 2010. Combined temperature and UV influences on the mechanical performance of WPCs. *Proceedings of the 11th International Conference on Biocomposites: Transition to Green Materials,* 11th International Conference on Biocomposites, Toronto, Canada.
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36. *Cao, Y. and **V. Yadama**. 2010. Characterization of PF/PVAc Hybrid Adhesive-Wood Interaction. *64th International Convention of Forest Products Society*, Madison, WI.
37. *Cameron, T., **V. Yadama**, K. R. Englund, and V. Barber. 2010. Coupled weathering effects on strength, stiffness, and creep behavior of wood-plastic composites. *64th International Convention of Forest Products Society*, Madison, WI.
38. Lowell, E., **V. Yadama**, *N. Peterson, and D.L. Nicholls. 2010. Influence of degree of beetle-killed spruce deterioration on wood-plastic composite properties. *64th International Convention of Forest Products Society*, Madison, WI.
39. Barbuta, C., P. Blanchet, A. Cloutier, **V. Yadama**, and E. Lowell. 2009. OSB as substrate for engineered wood flooring. ICWSE, Brasov, Romania.
40. Barbuta, C., P. Blanchet, A. Cloutier, **V. Yadama**, and E. Lowell. 2009. OSB used as substrate for engineered wood flooring. In Proceedings of 43rd International Wood Composites Symposium, Seattle, WA.
41. *Wang, Y., **V. Yadama**, and D. Bhattacharyya. 2009. Cure Kinetics of PF/PVAc Hybrid Adhesives for Profile Wood Strand Composites. Forest Products Society 63rd International Convention, Boise, Idaho.

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44. Barbuta, C., P. Blanchet, A. Cloutier, **V. Yadama**, and E. Lowell. 2009. Manufacture of engineered wood flooring using OSB substrate. Inter-university Colloquium: Bordeaux University-Laval University, Bordeaux, France.
45. **Yadama, V**., *S. Weight, and J. Fujii. 2008. *Thin-strand ply technology*. International Wood Composites Symposium Technical Workshop on Manufacturing Technology Advancements That Create Value, Seattle, WA, USA.
46. Lowell, E., **V. Yadama**, D.L. Nicholls, and *N. Peterson. 2008. *Beetle-killed Spruce from Alaska's Kenai Peninsula in Manufacture of Wood-Plastic Composites*. 4th International Conference on Advanced Engineered Wood and Hybrid Composites, Bar Harbor, Maine, USA.
47. Lowell, E., **V. Yadama**, and *C. Langum. 2008. *Characterization of Pacific Northwest Softwoods for Wood Composites Production*. Technical Poster Presentation, Forest Products Society 62nd International Convention, St. Louis, Missouri, USA.
48. *Weight, S. and **V. Yadama**. 2008. *A Novel Concept for Producing Veneers with Wood Strands from Small-Diameter Timber*. 2008 WSU Academic Showcase, Pullman, WA.
49. *Peterson, N., **V. Yadama**, E. Lowell, and D.L. Nicholls. 2008. *Highly Deteriorated Beetle-killed Spruce from the Kenai Peninsula, Alaska, as Raw Material Source in Wood Plastic Composites*. 2008 WSU Academic Showcase, Pullman, WA.
50. Miyasaka, T. and **V. Yadama**. 2008. *Wood Chair Series: Application of Oriented Strand Composites.* 2008 WSU Academic Showcase, Pullman, WA.
51. **Yadama, V**., E. Lowell, D.L. Nicholls, and *N. Peterson. 2007. *Wood-plastic composites from beetle-killed spruce: An opportunity for sustainable economic contribution in the Kenai Peninsula, Alaska*. IUFRO ALL-Division 5 Conference: Forest Products and Environment – A Productive Symbiosis, Taipei, Taiwan.
52. *Langum, C., **V. Yadama**, and E. Lowell. 2007. *Characterization of Pacific Northwest Softwoods for Wood Composites Production*. Technical Poster Presentation, 61st Forest Products Society International Convention, Nashville, TN.
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54. *Weight, S. and **V. Yadama**. 2007. *Thin Strand Ply Composite Technology: A Hybrid of Strand- and Veneer-Based Composite Technologies For Utilization of Small-Diameter Timber.* Technical Poster Presentation, International Wood Composites Symposium, Seattle, WA.
55. **Yadama V**., K.R. Englund, and R. Vaagen. 2006. *Sawmill residues for wood-plastic composites*. Progress in Wood & Bio Fibre Plastic Composites 2006 International Conference, Toronto, Canada.

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57. **Yadama, V**. and M. P. Wolcott. 2006. *WPCInfo.org*. Technical Poster Presentation, Progress in Wood and Bio Fibre Plastic Composites 2006 International Conference, Toronto, Canada
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59. *Weight, S. and **V. Yadama**. 2006. *Viability study of oriented strand composite use as a furniture substrate*. Technical Poster Presentation, Forest Products Society 60th International Convention, Newport Beach, CA, USA.
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61. *Chowdhury S., **V. Yadama**, M-P. Laborie, and A. McDonald. 2005. *Mechanism to Improve Toughness and Moisture Resistance of a Typical OSB Resin*. FPS 59th International Convention, Quebec City, Canada
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63. **Yadama V**. and S. Shook. 2005. *Wood-Plastic Composite Extrusion Technology: A Value-Added Opportunity for the Pacific Northwest*. Sustainable Wood Production Initiative: Timber Supply, Land Use and Sustainable Forestry Options in the PNW Symposium, November 30 - December 1, Vancouver, WA (organized by Western Forestry and Conservation Association and Pacific Northwest Research Station USDA Forest Service)
64. **Yadama, V**., K. R. Englund, and M. P. Wolcott. 2004. *Transfer of wood-plastic composites extrusion manufacturing technology to local communities in Washington. Extension and Technology Transfer Technical Session*. 58th Annual Forest Products Society Meeting, Grand Rapids, MI.
65. **Yadama, V**. and S. Shook. 2004. *Market Evaluation of Wood Plastic Building Components*. Progress in Woodfibre Plastic Composites 2004 Conference, Toronto, Canada.
66. **Yadama, V**., D. Nicholls, and E. Lowell. 2004. *Wood-Plastic Composites using Dead Spruce*. Kenai Forest, Wildfire and Fuels Management Coordinating Committee Meeting, Kenai, Alaska
67. **V. Yadama** and M. P. Wolcott. 2003. *Characterization and Influence of Strand Waviness in a Wood-Strand Composite*. In Proceedings of the 7th European Panel Products Symposium, Llandudno, North Wales, UK.
68. **Yadama, V**. and M. P. Wolcott. 2003. *Characterization of Out-of-Plane Strand Orientation and its Influence on Mechanical Properties.* Technical Presentation at the 57th Forest Products Society Annual Meeting, Bellevue, WA, USA

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70. **Yadama, V**. 2003. *Influence of panel structure on the elastic behavior of engineered strand composites*. Technical Workshop, 37th International Wood Composite Materials Symposium, Washington State University, Pullman, WA
71. Zhang, J. and **V. Yadama**. 2002. *Evaluation of 3M Jet-Weld™ adhesives for application in upholstered furniture frame construction*. In Proceedings of the TAPPI Hot Melt Symposium. Charlotte, NC. pp 179-190.
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73. *Morgan, S.P. and **V. Yadama**. 1998. *Fatigue Strength of Metal Connector Plates Used in Upholstered Furniture Frames*. Technical Poster Presentation, Forest Products Society, 52nd Annual Meeting, Merida, Mexico.
74. *Muisu, Fred N., **V. Yadama**, and D.E. Lyon. 1996. *Modeling Lateral Load-Deformation Behavior of Staple Joints*. Technical Poster Presentation, Forest Products Society, 50th Annual Meeting, Minneapolis, MN.
75. Lyon, D. E. and **V. Yadama**. 1995. *Quality Issues With Wood, Foam, and Fiber*. Quality Conference, Mississippi State University, Starkville, MS.
76. **Yadama, V**. and Y. Q. Gui. 1995. *Study compares joints in upholstered furniture*. Modern Woodworking. October, pp 1,7,43.
77. **Yadama, V**. 1994. *Ideas for Engineering Upholstery Frames and Other Components to Meet the Newest Trends in Seating*. Technical Conference, International Woodworking Fair, Atlanta, GA.
78. Lyon, D. E. and **V. Yadama**. 1994. *Producing Quality Furniture Components*. Quality Conference, Mississippi State University, Starkville, MS.
79. Gui, Y. Q. and **V. Yadama**. 1994. *Analysis of Typical Upholstered Furniture Frame T-Joints*. Technical Poster Presentation, Forest Products Society, 48th Annual Meeting, Portland, ME.
80. **Yadama, V**., B. M. Syed, P. H. Steele, and D. E. Lyon. 1992. *Strength of Multiple Staple Joints in Selected Wood and Wood-Based Materials*. Technical Poster Presentation, Forest Products Society, 46th Annual Meeting, Charleston, SC.
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82. Harding, O. V., P. H. Steele, **V. Yadama**, and C. Boden. 1992. *Hardwood Lumber Grading Using the Accelerated Statistical Predictor (ASP)*. Forest Products Society, 46th Annual Meeting, Charleston, NC.
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1. Yadama, V. 2017. Wood to Biofuels Knowledgebase, NARA. www.woodtobiofuels.org.
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SPONSORED & INDUSTRIAL PROJECTS

(Principal investigator underlined)

(Key to indicators or description of contributions to Grants, Contracts and Fund Generation: 1 = Provided the initial idea; 2 = Developed research/program design and hypotheses; 3 = Authorship of grant application; 4 = Developed and/or managed budget; 5 = Managed personnel, partnerships, and project activities.)

Washington State University **(Total Funds = $44,360,621; Directly Responsible = $4,735,145)**

1. "PFI-RP: Manufacture of durable and stable cross-laminated strand-veneer lumber for mass timber construction," Funding Source: NSF, **V. Yadama** and M. Aro, $749,945, 9/15/2018- 8/31/2021 (1, 2, 3, 4, & 5).
2. "Testing and evaluation of particleboard underlayment and hemp-based particleboard," Funding Source: Plummer Forest Products, **V. Yadama**, $34,801, 08/16/2018 (1, 2, 3, 4, & 5).
3. "Center for Bioplastics and Biocomposites, Phase I I/UCRC Washington State University," Funding Source: National Science Foundation IIP, **V. Yadama** and M. Kessler, $300,000, 08/01/2017-09/31/2019 (2, 4, 5)
4. "Small scale production of natural fiber architectural decorative panels," Funding Source: WSU Office of Commercialization Gap-Funding, **V. Yadama** and L.V. Smith, $50,000, 2018 (1, 2, 3, 4, 5)
5. Funds donated towards Industry Support Funds to advance understanding of resin transfer molding of natural fiber panels, Funding Source: Formology, **V. Yadama**, $2,500 (1, 5)
6. "Nail laminated bamboo panel testing," Funding Source: Resource Fiber LLC, R. Duncan and **V. Yadama**, $11,132, 2017 (2, 3, 5)
7. "Grape vine pressing/testing," Funding Source: Formology, R. Duncan and **V. Yadama**, $11,906, 2017 (1,5)
8. "TrashWalls: Ultra Low-Cost Energy Retrofits (UCLER)," Funding Source: AIA Upjohn Research Initiative Grant, **T. Miyasaka**, R. Richards, V. Yadama, D. Drake, and R. Hohlbein, $19,500, 2016-2018 (5)

9. "Manufacturing of Agro- and Wood-based large-scale panels," Funding Source: Spekply, **V. Yadama** and R. Duncan, $5,750, 2015 (1, 2, 3, 4, 5)
10. "Liquid molding of wood strand panels with large curvature for automotive applications – a sustainable solution," Funding Source: USDA/NIFA, **V. Yadama** and L.V. Smith, $493,761, 2015 (1, 2, 3, 4, 5)
11. "Manufacturing of Guayule Particleboard Panels," Funding Source: Yulex, **V. Yadama**, $18,850, 2014 (1, 2, 3, 4, 5)
12. "Investing in manufacturing community partnershipis," Funding Source: Economic Development Administration, US Department of Commerce, A. Fatland, G. Ganjyal, A. Holzer, J. Leachman, C. Love, **V. Yadama**, $80,000, 2013-2014 (1, 2, 3, 4, 5)
13. "Guayule fiber particleboard panels: manufacturing and property evaluation," Funding Source: Yulex, **V. Yadama**, $12,100, 2013 (1, 2, 3, 4, 5)
14. "CAREER: Development of high-performance lignocellulosic composites for building envelopes: Authentic learning about sustainable materials through research-based inductive approach," Funding Source: National Science Foundation, **V. Yadama**, $400,000, 2012-2017 (1, 2, 3, 4, 5)
15. "Evaluation of elastic constants of orthogonally layered veneer-based wood composite," Funding Source: Triton Container, **V. Yadama** and D. Bender, $11,837, 2012 (2, 3, 4, 5)
16. "Development and evaluation of sorghum natural fiber panels for interior applications," Funding Source: ChloroFill Renewable Building Materials, **V. Yadama**, $7,000, 2012 (1, 2, 3, 4, 5)
17. "Northwest Advanced Renewable Alliance (NARA): A New Vista for Green Fuels, Chemicals, and Environmentally Preferred Products (EPPs)," Funding Source: AFRI Competitive Grant, USDA NIFA, M.P. Wolcott, R. Cavalieri, **V. Yadama** (one of the co-investigators & Outreach Team Leader), and other Co-PIs, $40,000,000, 2011-2016 (2, 3, 4, 5)
18. "Manufacturing and testing of sorghum prototype panels with thermoplastic and thermoset resins," Funding Source: ChloroFill Renewable Building Materials, **V. Yadama**, $4,000, 2011 (1, 2, 3, 4, 5)
19. "Panelized wood composite assemblies for sustainable building envelopes," Funding Source: Inland Northwest Forest Products Research Consortium, Wood Utilization Research, USDA, D. Bender, **V. Yadama**, and K.R. Englund, $185,000, 2010-2013 (1, 2, 3, 4, 5)
20. "Wood-plastic composites from low-value Alaskan biomass and blends of recycled thermoplastics," Funding Source: Univ. of Alaska-Fairbanks, **V. Yadama** and K.R. Englund, $50,461, 2010-2012 (1, 2, 3, 4, 5)
21. "Converting low-value forest biomass to higher value by-products including biofuels, biopolymers, and specialty composites using hot-water based biorefinery," Funding Source: USDA FS, **V. Yadama**, T. Amidon, and E. Lowell, $116,013, 2009-2013 (1, 2, 3, 4, 5)
22. "Optimizing wood composites for thermal and durability performance," Funding Source: Inland Northwest Forest Products Research Consortium, Wood Utilization Research, D. Bender, **V. Yadama**, K. Englund, $190,000, 2009-2011 (1, 2, 3, 4, 5)

23. "MDF pressing to evaluate modification done to fiber and refining method," Funding Source: SierraPine, **V. Yadama**, R. Duncan, and S. Lewis, $2,862, 2009 (2, 3, 4, 5)
24. "Investigation of starch-based epoxy curing agent and impregnating crosslinker for wood composite industry," Funding Source: USDA CSREES NRI, J. Zhang, X. Ming, and **V. Yadama**, $496,054, 2008-2012 (3, 4, 5)
25. "Value-added wood-strand composites," Funding Source: Inland Northwest Forest Products Research Consortium, Wood Utilization Research, D. Bender, **V. Yadama**, K. Englund, M-P. Laborie, and J. Zhang, $195,190, 2008-2011 (1, 2, 3, 4, 5)
26. "Manufacturing and testing of TrussCore fiberboard panels and wood strand prototype panels for SierraPine & Greenwood Resources," Funding Source: West Mountain View Intl., V. Yadama, R. Duncan, and S. Lewis, $6,972, 2008 (2, 3, 4, 5)
27. "Natural Fiber Mat Pressing," Funding Source: Sisalwood (Payan Ole Moioi), **V. Yadama**, R. Duncan, S. Lewis, $1,686, 2008 (1, 2, 3, 4, 5)
28. "Smart bark technology, a value-added opportunity for bark as a specialty plant care product," Funding Source: Phase I RTD, Washington Technology Center, **V. Yadama** and R. Hummel, $99,778, 2008-2009 (1, 2, 3, 4, 5)
29. "Unrestricted funds for wood composites research and development," Funding Source: Coillte Panel Products, Ireland/UK, **V. Yadama**, $10,000, 2007- no end date (1, 2, 3, 4, 5)
30. "Alaskan timber resources for wood-plastic composites: A feasibility study," Funding Source: Univ. of Alaska-Fairbanks, **V. Yadama** and K. Englund, $47,386, 2007-2009 (1, 2, 3, 4, 5)
31. "Investigation of starch-based polycarboxylic acid as curing agent for waterborne epoxy adhesives and crosslinker for cellulose," Funding Source: Washington Legislature Agriculture Emerging Issues (WSU ARC), J. Zhang, X. Ming, and **V. Yadama**, $63,311, 2007-2008 (5)
32. "Addendum to evaluation of Alaskan beetle-killed spruce for WPCs," Funding Source: USDA Forest Service PNW Research Station, **V. Yadama**, E. Lowell, and D.L. Nicholls, $30,022, 2007-2008 (1, 2, 3, 4, 5)
33. "Manufacturing and testing of ponderosa pine strand 3D cores," Funding Source: West Mountain View Intl., **V. Yadama**, R. Duncan, and S. Lewis, $7,424, 2006 (2, 3. 4, 5)
34. "Business expansion for an eastern Washington sawmill – environmentally appropriate wood-plastic composites," Funding Source: Phase II RTD Grant, Washington Technology Center & Vaagen Bros. Lumber, Inc., **V. Yadama**, K. Englund, R. Tichy, E. Kong, and R. Vaagen, $119,350, 2006-2007 (1, 2, 3, 4, 5)
35. "Manufacturing and testing of prototype wood strand 3D cores," Funding Source: West Mountain View Intl., **V. Yadama**, R. Duncan, and S. Lewis, $8,069, 2006 (2, 3, 4, 5)
36. "Development of oriented strand board substrate for engineered wood flooring," Funding Source: USDA Forest Service PNW Research Station, **V. Yadama**, P. Blanchet, and E. Lowell, $22,000, 2006-2009 (2, 3, 4, 5)
37. "Impregnation of oriented strand composites with thermoplastic polymers," Funding Source: USDA WUR Inland Northwest Forest Products Research Consortium, D.

Bender**, V. Yadama** (PI of the subproject)**,** M.P. Wolcott, and S. Shook, $100,098, 2005 – 2008 (2, 3, 4, 5)

38. "Manufacturing and testing of TrussCore with wood strands," Funding Source: West Mountain View Intl., **V. Yadama**, R. Duncan, and S. Lewis, $6,245, 2005 (2, 3, 4, 5)
39. "Conference to address wood utilization opportunities to enhance forest health," Funding Source: USDA Forest Service PNW Research Station, **V. Yadama** and E. Lowell, $22,000, 2004-2005 (1, 2, 3, 4, 5)
40. "Sawmill residues for wood-plastic composites," Funding Source: Phase I RTD Grant, Washington Technology Center & Vaagen Bros. Lumber, Inc., **V. Yadama**, K. Englund, and R. Vaagen, $48,365, 2004-2005 (1, 2, 3, 4, 5)
41. "Evaluation of Alaskan beetle-killed spruce for WPCs," Funding Source: USDA Forest Service PNW Research Station, **V. Yadama**, E. Lowell, and D.L. Nicholls, $37,000, 2004 – 2007 (1, 2, 3, 4, 5)
42. "Development of an outreach program regarding manufacturing of extruded wood-plastic products," Funding Source: USDA Forest Service PNW Research Station, **V. Yadama** and S. Shook, $50,035, 2003-2005 (1, 2, 3, 4, 5)
43. "Development of novel oriented strand substrates for furniture and case goods applications," Funding Source: USDA WUR Inland Northwest Forest Products Research Consortium, **V. Yadama**, R. Tichy, and S. Shook, $118,076, 2003 – 2006 (1, 2, 3, 4, 5)
44. "Mechanisms to improve the durability of oriented strand composites," (Subproject under "Durable wood composites for naval low-rise buildings" grant, M.P. Wolcott, PI), Funding Source: Office of Naval Research, **V. Yadama**, M-P. Laborie, A. McDonald, $140,968, 2003 – 2006 (2, 3, 4, 5)
45. "Material property evaluation of juvenile wood strands from Pacific Northwest softwoods," Funding Source: USDA Forest Service PNW Research Station, **V. Yadama**, E. Lowell, and R. Monserud, $48,276, 2003 – 2008 (1, 2, 3, 4, 5)
46. "Mechanical testing of timber and lumber products," Funding Source: J. M. Huber Corp., **V. Yadama** and R. Duncan, $13,650, 2003 (2, 3, 4, 5)
47. "Travel grant to promote joint collaboration in research and development between WMEL and Kasetsart University," Funding Source: Office of International Programs, WSU, **V. Yadama**, $1,490, 2003 (2, 3, 4, 5)
48. "37th International Wood Composites Materials Symposium," Funding Source: Office of Naval Research, **V. Yadama**, $5,000, 2003 (2, 3, 4, 5)

Mississippi State University **(Total Funds = $466,824; Directly Responsible = ~$400,000)**

49. "Effect of fatigue on behavior of typical upholstered furniture frame joints," Funding Source: USDA WUR, **V. Yadama**, $29,500, 1996-2000
50. "Quality assurance of upholstered furniture frame components and optimization of frame design," Funding Source: McIntire-Stennis, **V. Yadama**, $89,524, 1996-1998
51. "Testing of 3M Jet-Weld adhesive," Funding Source: 3M Adhesive Systems, **V. Yadama**, $1,200, 1996-1997

52. "Evaluation of recliner chair seat foundations," Funding Source: Milliken & Company, **V. Yadama**, $4,200, 1996-1997
53. "Decision software development for engineered wood products to be used in upholstered frames," Funding Source: Weyerhaeuser, D.E. Lyon and **V. Yadama**, $16,500, 1996-1998
54. "Instrumentation of furniture testing equipment for accurate collection of data," Funding Source: USDA WUR, D.E. Lyon, **V. Yadama**, $51,000, 1995-1999
55. "Properties of Riverwood International's plywood panels," Funding Source: Riverwood International, **V. Yadama,** $4,000, 1995-1996
56. "Furniture design data bases for industry use," Funding Source: USDA WUR, D.E. Lyon and **V. Yadama**, $59,000, 1994-1998
57. "Feasibility of using southern pine for furniture framing material," Funding Source: USDA WUR, **V. Yadama,** $19,850, 1993-1997
58. "Statistical analysis of the IFD inter-lab study data," Funding Source: AFMA's Joint Industry Foam Standards and Guidelines Committee, **V. Yadama**, $2,000, 1993-1994
59. "Testing of polyurethane and polyester fiber cushions," Funding Source: Society of Plastic Industry, **V. Yadama**, $5,000, 1994-1995
60. "Optimization of furniture design," Funding Source: USDA WUR, D.E. Lyon and **V. Yadama**, $50,000, 1992-1997
61. "Load-deformation relation of staple joints and factors affecting its behavior," Funding Source: USDA NRI Competitive Grant, **V. Yadama** and D.E. Lyon, $45,000, 1992-1996
62. "Improvement in furniture design and manufacturing technology," Funding Source: USDA WUR, D.E. Lyon and **V. Yadama**, $90,050, 1991-1996

OUTREACH ACTIVITIES: CONFERENCES AND WORKSHOPS

Washington State University **(Total Revenue from Outreach Activities & Personally Expended = $936,402; Number of Attendees = 3,287)**

1. **Yadama, V**. and K. Englund. Wood Composites Symposium. International Woodworking Fair, 2016, Atlanta, GA, $4,500 (Number of Attendees: 31)
2. **Yadama, V.,** K. Englund, C. Burke, S. Leavengood, E. Lowell, P. Moulton, and J. Hougham. 2nd Northwest Wood-Based Biofuels + Co-Products Conference. 2016, Seattle, WA, $50,200 (Number of Attendees: 160)
3. Englund, K., **V. Yadama**, R.J. Tichy. 49th International Wood Composites Symposium. 2015, Seattle, WA, $38,400 (Number of Attendees: 110)
4. **Yadama, V.,** K. Englund, C. Burke, S. Leavengood, E. Lowell, S. Kar, M. Krumenauer, P. Moulton, S. Stanners, and R. Dingethal. Northwest Wood-Based Biofuels + Co-Products Conference. 2014, Seattle, WA, $39,324 (Number of Attendees: 211)
5. R. J. Tichy, K. Englund, and **V.Yadama**. 48th International Wood Composites Symposium. 2014, Seattle, WA, $59,153 (Number of Attendees: 127)
6. **Yadama, V**., R. J. Tichy, and K. Englund. 47th International Wood Composites Symposium: Market Dynamics, Product Development, Process Innovation. 2013, Seattle, WA, $73,973 (Number of Attendees: 140)

7. **Yadama, V**., R. J. Tichy, and K. Englund. 46th International Wood Composites Symposium: Managing the Woody Biomass Supply Chain - Impact on Your Buisiness, 2012, Seattle, WA, $46,170 (Number of Attendees: 149)
8. **Yadama, V**. and Tichy, R.J., Co-chairs, Joint 45th International Symposium on Wood Composites & Veneer Processing and Products, 2011, Seattle, WA, $76,180 (Number of Attendees: 194)
9. **Yadama, V**. and R.J. Tichy, Co-chairs, 44th International Wood Composites Symposium, 2010, Seattle, WA, $68,650 (Number of Attendees: 124)
10. **Yadama, V**. and R.J. Tichy, Co-chairs, 43rd International Wood Composites Symposium and Technical Workshop, 2009, Seattle, WA, $62,460 (Number of Attendees: Symposium – 146; Workshop – 40)
    a. Workshop Topic: *Natural Fibers: Their Role in the Carbon Economy*
11. **Yadama, V**. and R. J. Tichy, Co-chairs, 42nd International Wood Composites Symposium and Technical Workshop, 2008, Seattle, WA, $92,698 (Number of Attendees: Symposium – 183; Workshop – 68)
    a. Workshop Topic: *Manufacturing Technology Advancements That Create Value*
12. **Yadama, V**. and R.J. Tichy, Co-chairs, 41st International Wood Composites Symposium and Technical Workshop, 2007, Seattle, WA, $109,500 (Number of Attendees: Symposium – 223; Workshop – 75)
    a. Workshop Topic: *Real-time Process and Predictive Modeling of Wood Composite Manufacturing Processes*
13. **Yadama, V**. and R.J. Tichy, Co-chairs, 40th International Wood Composites Symposium and Technical Workshop, 2006, Seattle, WA, $125,525 (Number of Attendees: Symposium – 234; Workshop – 80)
    a. Workshop Topic: *Advances in Resin Technology and Pressing*
14. **Yadama, V**. and R.J. Tichy, Co-chairs, 39th International Wood Composites Symposium and Technical Workshop, 2005, Pullman, WA, $68,236 (Number of Attendees: Symposium -- 253; Workshop – 75)
    a. Workshop Topic: *Panel Surfacing Technology*
15. **Yadama, V**. and R.J. Tichy, Co-chairs, 38th International Wood Composites Symposium and Technical Workshop, 2004, Pullman, WA, $90,908 (Number of Attendees: Symposium – 240; Workshop – 60)
    a. Workshop Topic: *Science of Furnish Preparation, Adhesives, and Blending*
16. **Yadama, V**. and R.J. Tichy, Co-chairs, 37th International Wood Composite Materials Symposium and Technical Workshop, 2003, Pullman, WA, $94,175 (Number of Attendees: Symposium – 238; Workshop – 56)
    a. Workshop Topic: *Computer Applications for Improved Products and Processes*
17. **Yadama, V**. and E. Lowell. Co-chairs, Wood Utilization Solutions to Hazardous Fuels, 2004, Spokane, WA, $8,700 (Number of Attendees: 70).

Mississippi State University

Chaired, *Working with Foam, Fiber, and Fabric*, Upholstered Furniture Conference, 1995, Tupelo, MS

Discussion Leader and Speaker, *Quality Issues with Wood, Foam, and Fiber,* Quality Conference, 1995, Starkville, MS

Discussion Leader and Speaker, *Producing Quality Furniture Components*, Quality Conference, 1994, Starkville, MS

Moderator and Speaker, *Ideas for Engineering Upholstery Frames and Other Components to Meet the Newest Trends in Seating,* Technical Conference, International Woodworking Fair, 1994, Atlanta, GA

Chaired, *Foam and Fiber for Upholstered Furniture,* Furniture Technology Seminar Series, 1992, Tupelo, MS

GRADUATE STUDENTS CHAIRED

Major Professor (Graduate Committee Chair/Co-Chair) for 7 Ph.D. and 16 M.S. students

<u>*Washington State University*</u> (* indicates students co-chaired)

Hasan Rafsan Jani, PhD. (*In progress, expected May 2021).* Mechanical and Materials Engineering. Topic: *Resin flow analysis and modeling through wood-strand preforms*.

- ❖ Supported on AFRI Competitive Grant, USDA NIFA

Mostafa Mohammadabadi, PhD. (*In progress, expected May 2019).* Materials Science and Engineering. Topic: *Designing and analysis of wood strand sandwich panels for building envelopes*.

- ❖ Supported on NSF CAREER Grant
- ❖ Publication output: 2 journal articles published, 2 in preparation, 1 presentation

Benjamin Gartner, MS. *2017.* Materials Science and Engineering. Topic: *Effects of preform architecture and processing parameters on the production of wood strands reinforced resin transfer molded composite panels.*

- ❖ Supported on AFRI Competitive Grant, USDA NIFA

James Jarvis, MS. (*In progress, expected Summer/2018*). Civil and Environmental Engineering. Topic: *Development of high-performance lignocellulosic composites for building envelopes.*

- ❖ Supported on NSF CAREER Grant
- ❖ Publication output: 1 journal article in preparation, 1 presentation
- ❖ Project Engineer, DCI Engineers, Spokane, WA

Rui Zhu, PhD. *2016*. Materials Science and Engineering. Topic: *Groundwork for Integration of Hot Water Extraction as a Potential Pre-Process in a Biorefinery for Downstream Conversion and Nano-Fibrillation.*

- ❖ Supported on AFRI Competitive Grant, USDA NIFA
- ❖ Publication output: 5 journal articles published, 4 presentations
- ❖ Xinxiu New Materials Co., Ltd, Santa Clara, CA

Wenrui Yang, MS. *2014*. Mechanical and Materials Engineering. Topic: *Resin transfer molding of wood-strand composite panels.*

- ❖ Publication output: 1 journal article in preparation, 1 presentation

Raul Pelaez-Samaniego, PhD. *2104*. Biological Systems Engineering. Topic: *Characterization of hot water extracted wood and its influence on composite production and properties.*

- Publication output: 6 journal articles, 5 presentations
- Recipient of PhD 2-year Fellowship from the Fulbright Program, LASPAU
- Partial support on USDA FS Research Grant
- Faculty of Chemical Sciences, Universidad de Cuenca, Ecuador

***Chusheng Qi**, PhD. *2013*. Mechanical and Electronic Engineering. Topic: *Sorghum composite panels: processing and properties*.

- Visiting PhD student from Northwest A & F University, Yangling, China
- Partially supported by China Scholarship Council (CSC)
- Publication output: 3 journal articles published and 1 presentation
- College of Material Science and Technology, Beijing Forestry University, China

Yi Wang, PhD, 07/2012. Civil and Environmental Engineering. Topic: *Profile-forming of wood-strand composites: processes, forming characteristics, and product properties.*

- Publication output: 3 journal articles, 1 proceedings paper, 4 presentations
- Technical Analyst, Plummer Forest Products, Post Falls, Idaho
- Partial support from USDA NRI Competitive Grant
- Technical Director, Plummer Forest Products, Post Falls, ID

***Xiaoming Wen**, MS (*Project option*). 05/2012. Civil and Environmental Engineering. Topic: *Blend of recycled plastics for WPCs*.

- Publication output: 1 presentation

Nathan White, MS. 2011. Civil and Environmental Engineering. Topic: *Strategies for improving thermal and mechanical properties of wood-strand composites*.

- Publication output: 1 journal article, 1 presentation
- Provided critical preliminary results for NSF CAREER Grant
- Engineer Intern II, Stanley Consultants Inc., Centennial, CO

Yang Cao, MS. 2010. Civil and Environmental Engineering. Topic: *Characterization of PF/PVAc hybrid adhesive-wood interaction and its effect on wood strand composites performance.*

- Publication output: 1 journal article, 1 proceedings paper, 4 presentations
- Statistician, Instrumentation Laboratory, Bedford, MA

Christopher Voth, MS. 2009. Civil and Environmental Engineering. Topic: *Lightweight sandwich panels using small-diameter timber wood-strands and recycled newsprint cores.*

- Publication output: 1 journal article, 4 presentations
- Provided critical preliminary results for NSF CAREER Grant
- Nuclear Engineer, Puget Sound Naval Shipyard & Intermediate Maintenance Facility, Bremerton, WA

***Tony Cameron**, MS. 2009. Civil and Environmental Engineering. Topic: *Utilization of Alaskan wood resources for WPC production*

- Publication output: 1 proceedings paper and 2 presentations
- Structural Engineer, Puget Sound Naval Shipyard, Bremerton, WA

*__Steven Michael__, MS. 2008. Civil and Environmental Engineering. Topic: *Thermoplastic encapsulation of wood strand composite using a tie-layer.*
- ❖ Publication output: 1 journal article
- ❖ Design Engineer, INCA Engineers, Bellevue, WA

Nels Peterson, MS. 2008. Civil and Environmental Engineering. Topic: *Wood-thermoplastic composites manufactured using beetle-killed spruce from Alaska's Kenai Peninsula*
- ❖ Publication output: 1 journal article, 5 presentations
- ❖ Design Engineer, PCS, Tacoma, WA

Christopher Langum, MS. 2008. Civil and Environmental Engineering. Topic: C*haracterization of Pacific Northwest softwoods for wood composites production*
- ❖ Publication output: 2 journal articles, 2 presentations
- ❖ Design Engineer, KPFF Consulting Engineers, Denver, CO

Shilo Weight, MS. 2007. Civil and Environmental Engineering. Topic: *A novel wood-strand composite laminate using small-diameter timber*
- ❖ Publication output: 2 journal articles, 1 proceedings paper, 4 presentations
- ❖ Provided critical preliminary results for NSF CAREER Grant
- ❖ Design Engineer, Anderson-Peyton Structural Engineers, Seattle, WA

Sudip Chowdhury, MS. 2006. Civil and Environmental Engineering. Topic: *A mechanism to improve durability of oriented strand composites*
- ❖ Publication output: 2 journal articles, 3 presentations
- ❖ Completed PhD at Virginia Tech and is currently a Post-Doctoral Fellow at UBC, Vancouver, Canada
- ❖ R&D Group Leader, Extender/Filler, Willamette Valley Company, Eugene, OR

Mississippi State University

Fred Muisu, PhD. 1997. Co-Advisor. Topic: *Modeling load-slip behavior of laterally loaded wood-staple joints*. Faculty, University in Kenya

Vishwanatha Thalakola, MS. 1995. Co-Advisor. Topic: *Load, strain, and deflection measurements in a sofa frame using an automatic data acquisition system*.

Hari Addanki, MS. 1994. Co-Advisor. Topic: *Static stress and frictional force analysis of ottoman unit of a recliner chair mechanism*. eV Battery Systems Engineering Supervisor, Ford Motor Company, Detroit

Srinivasa Anmalsetty, MS. 1993. Co-Advisor. Topic: *Feasibility of using a mannequin for automated recliner performance testing*.

GRADUATE COMMITTEES MEMBER

Doctoral

Lang Huang, PhD candidate, Civil and Environmental Engineering, WSU

Preetam C. Mohapatra, PhD candidate, School of Mechanical and Materials Engineering, WSU

Ying-Li Tsai, PhD candidate, The University of British Columbia, Canada, External Examiner, 2017

Hanwen Zhang, PhD, Materials Science and Engineering Program, WSU, 2017

Khoi Duc Mai, PhD, Civil and Environmental Engineering, WSU, 2015

Mohammedmahdi Salavatian, PhD, Mechanical and Materials Engineering, 2014

Shi-Shen Liaw, PhD, Biological Systems Engineering, WSU, 2013

Amir Sahaf, PhD, Materials Science and Engineering Program, WSU, 2013

Brent Olson, PhD, Civil and Environmental Engieering, WSU, 2011

Meng-Hsin Tsai, PhD, Civil and Environmental Engineering, WSU, 2011

Fangliang Chen, PhD, Civil and Environmental Engineering, WSU, 2011

Costel Barbuta, PhD, Wood Science and Engineering, Laval University, Quebec City, Canada, 2011 (***Served as advisor to the visiting student from Laval University; published 2 journal articles, 1 proceedings paper, and 3 presentations)***

William Escobar Gacitua, PhD, Civil and Environmental Engineering, 2008

Narayana Srinivasan, PhD, Mechanical Engineering, The University of Auckland, New Zealand, External Examiner, 2008

Anjaneya Penneru, PhD, Mechanical Engineering, The University of Auckland, New Zealand, External Examiner, 2006

Masters

Kyle Conrad, MS, MS, Civil and Environmental Engineering, WSU

Yu Jiang, MS, MS, Civil and Environmental Engineering, WSU, 2017

Beth Weiss, MS, Civil and Environmental Engineering, WSU, 2017

David Lemme, MS, Mechanical and Materials Engineering, WSU, 2016

Harrison Scarborough, MS, Mechanical and Materials Engineering, WSU, 2015

Evan S. Olszko, MS, Civil and Environmental Engineering, WSU, 2015

Sara Loftus, MS, Civil and Environmental Engineering, WSU, 2015

Varun Gupta, MS, Mechanical and Materials Engineering, WSU, 2015

David Aguilera, MS, Civil and Environmental Engineering, WSU, 2014

Derek Ohlgren, MS, Civil and Environmental Engineering, WSU, 2013

Greg Nelson, MS, Mechanical and Materials Engineering, WSU, 2012

Hengxuan Chi, MS, Civil and Environmental Engineering, WSU, 2012

Xiaojie Guo, MS, Materials Science and Engineering, WSU, 2012

Peng Zhan, MS, Materials Science and Engineering, WSU, 2012

Drew Mill, MS, Civil and Environmental Engineering, WSU, 2012

Jerod Harwood, MS, School of Architecture and Construction Management, WSU, 2011

Rui Zhu, MS, Mechanical and Materials Engineering, WSU, 2011

Tian Liu, MS, Mechanical and Materials Engineering, WSU, 2011

Oisik Das, MS, Biological Systems Engineering, WSU, 2010

Brandon Bilek, MS, Mechanical and Materials Engineering, WSU, 2010

Lee-Wen Chen, MS, Civil and Environmental Engineering, WSU, 2009

Derek Brosious, MS, Civil and Environmental Engineering, WSU, 2008
Viviane Villechevrolle, MS, Civil and Environmental Engineering, WSU, 2008
Zachary Rininger, MS, Civil and Environmental Engineering, WSU, 2008
Keyoumu Ayiguli, MS, Forest Products, University of Idaho, WSU, 2008
Arjun Kothidar, MS, Mechanical and Materials Engineering, WSU, 2008
Daniel Paul Stone, MS, Mechanical and Materials Engineering, WSU, 2008
Kyle Williams, MS, Civil and Environmental Engineering, WSU, 2007
Anand Mangalam, MS, Department of Forest Products, University of Idaho, 2003

Other

Hong Chen, Post Doc, Supported by The Priority Academic Program Development of Jiangsu Higher Education Institutions, P.R. China. Bamboo-based composite products.

Tom Ruffing, Graduate Student, Forest Products, Penn State University, Advised with research, experimental plan, analysis of results, and writing a paper on use of MAPP with pMDI resin in manufacturing OSB. Project was in collaboration with his advisor, Dr. Nikki Brown, at Penn State and Jone Cionni of Bayer Material Science LLC, 2008

Duff Bangs, Graduate Student, School of Architecture and Construction Management, Served as a research advisor in designing and constructing of chairs using thin-strand plies, 2007

UNDERGRADUATE & EXCHANGE STUDENTS SUPERVISED

Edgar Varela, University of Colorado, NSF REU Summer Intern, 2018 (Topic: *Natural/synthetic fiber & thermoplastic hybrid laminae for manufacturing molded composite products)*.

Jill C. Bowie, Washington State University, NSF REU Summer Intern, 2017 (Topic: *Creep testing and evaluation of wood strand sandwich panels*).

Aleesha Slattengren, University of Minnesota, NSF REU Intern, 2017 (Topic: *Nanoclay-activated woody biomass to use as high performance potting media*).

Trevor Charest, Undergraduate, WSU, 2017 (Topic: *Resin transfer molding of natural fiber composite panels)*

Ian M. Davis, Undergraduate Research, WSU, 2016 (Topic: *Enhanced pretreated biomass loaded with nanoclay to achieve an advanced growing media)*

Arill Bartrand, Undergraduate Research, The Auvil Scholarship, WSU, 2015-16 (Topic: *Stress distributions in wood under a bolt connection)*

Anthony Lathrop, Undergraduate, Physics, Washington State University, REU Program, AFRI Competitive Grant, USDA NIFA, 2012 (Topic: *Evaluation at nano-scale of hot-water extracted ponderosa pine chips*)

Bennett, Graham, Undergraduate, Mechanical Engineering, Washington State University, 2012 (Topic: *Manufacturing of natural fiber and wood-based composites and evaluation of material properties*)

Eric Brandon, Undergraduate student, Civil Engineering, Washington State University, 2010 (Topic: *Application of nano-particles to impart desired attributes to wood*)

Andrew Kracht, Undergraduate student, Civil Engineering, Washington State University, 2009 (Topic: *Mapping of businesses using Google Maps*)

Lena Rink, REU Program in Materials Science, Montana State University, 2008 (Topic: *Surface modification of wood flour to enhance interaction with thermoplastic matrix*)

Christophe De Vial, Undergraduate Intern, EPF – Ecole d'Ingenieurs, France, 2007 (Topic: *Wood-strand composites for structural applications)*

Stéphane Pollet, Undergraduate Intern, EPF – Ecole d'Ingenieurs, France, 2005 (Topic: *Wood-strand composites for structural applications)*

Thanaphon Nunimit, Undergraduate Intern, Forest Products, Kasetsart University, Thailand, 2004 (Topic: *Thin wood-strand panel manufacturing with traditional OSB strands)*

Panida Udomsap, Undergraduate Intern, Forest Products, Kasetsart University, Thailand, 2004 (Topic: *Thin wood-strand panel manufacturing with traditional OSB strands)*

TEACHING

- Taught graduate and split-level courses
- Substantially revised the curriculum of course titled Natural Fibers (CE 594/MSE 544)
- Incorporated research-based learning through focused experiments on key concepts and weekly reading of publications on contemporary issues and subject areas covered

Students Evaluations of Teaching

Course ID	Title	Year(s)	Average Student Evaluation (out of 5)
Washington State University			
CE 580/600	Graduate Seminar	2017	-
CE 594/MSE 544	Natural Fibers	2015	4.60
CE 514	Advanced Mechanics of Materials	2014	4.54
CE 596/MSE 546	Engineered Wood Composites	2013	4.25
CE 594/MSE 544	Natural Fibers	2012	4.33
CE 514	Advanced Mechanics of Materials	2011	4.41
CE 594/MSE 544	Natural Fibers	2010	4.64
CE 596/MSE 546	Engineered Wood Composites	2009	4.57
CE 594/MSE 544	Natural Fibers	2008	4.90
CE 537/MSE 548	Natural Fiber Thermoplastic Composites	2007	4.83
CE/MSE 546	Parameters for Synthesis of Wood Composites	2006	4.25
CE 580/600	Graduate Seminar	2004, 2011	-
Mississippi State University			
FP 4024/6024	Wood Mechanics	1998	-
FP 4233/6233	Furniture Production II – Engineering Design of Furniture	1991-1998	4.37-4.55
Virginia Polytechnic Institute and State University			
	Wood Identification Lab, TA	1988	-
	Mechanical Properties of Wood Lab, TA	1987	-

PROFESSIONAL SERVICE ACTIVITIES

Editorial Activities

Yadama, V. and Tichy, R.J. Special Editors*, SWST's Special Wood and Fiber Science Issue on:* CORRIM Reports on Extending the Environmental Performance of Wood Uses for More Comprehensive Regional, Product, and Building Structure Coverage. Frank Beall (Editor). Society of Wood Science and Technology, 42(CORRIM Special Issue), March 2010.

Yadama, V. and Tichy, R.J. Co-Editors, 2003-2012. Proceedings of International Wood Composites Symposia. Washington State University, Pullman/Seattle, WA, USA

Reviewer for the following technical journals:

ASCE Journal of Structural Engineering
Bioresources Journal
Composites, Part A
Forest Products Journal
Holzforschung
Industrial Crops and Products
International Journal of Structural Engineering Review
Journal of Applied Polymer Science
Journal of Biobased Materials and Bioenergy
Journal of Composite Materials
Journal of Materials Science
Journal of Testing & Evaluation
Maderas Journal, Chile
Polymer Engineering and Science
The Canadian Journal of Forest Research
Wood and Fiber Science

Service to Federal & International Funding Agencies

Panel Manager, USDA/NIFA SBIR Program, Forests and Related Resources, 2017-2019

Award Review Panelist

USDA/NIFA SBIR Program, Phase 1, Forests and Related Resources, 2016, 2017
NSF Engineering Research Centers (ERC) Program, Preliminary Proposal Review Panelist, 2013
NSF Composite Materials, CMMI, 2012
NSF Materials Processing and Manufacturing (MPM) Program, 2010

Ad hoc Reviewer for the following competitive grants programs:

Mitacs Elevate Research Program, Canada, 2018
NSERC Canada, Collaborative Research & Development Grants, 2018
NSF, CBET-Environmental Sustainability Program, March 2017
NSF, GOALI Program, March 2015
USDA/NIFA SBIR Program, Forests and Related Resources, May 2015
NSF, ERC Preproposal, CMMI, December 2015
NSF, Engineering Research Center Full Proposal, Division of Engineering Research Centers (ERC), 2014

NSF, I/IUCRC, Division of Industrial Innovation and Partnerships (IIP), 2008
USDA SBIR Program, 2008
McIntire-Stennis for University of Idaho, 2006
The National Academies of Science Twinning Program, 2005
USDA NRI Competitive Grants Program
Swiss National Science Foundation, 2006

Service to State & Regional Agencies

Washington Forest Biomass Coordination Group, Task Force Member, 2013-Present
Montana Forest Products Round Table, Member representing WSU, 2013-Present

Department, college, and university committees and panels

Research Misconduct Investigation Committee, WSU, 2016-2017
Extension Promotion and Tenure Advisory Committee, WSU Extension, 2015-2017
Mentoring Committee Chair, Hui Li, CED, WSU Extension, 2018
Mentoring Committee Chair, Laura Ryser, CED, WSU Extension, 2015-present
Mentoring Committee Member, Somayeh Nassiri, Assistant Professor, CEE, WSU, 2016-present
Mentoring Committee Member, Adam Phillips, Assistant Professor, CEE, WSU, 2017-present
Mentoring Committee Member, Two faculty members, CED, WSU Extension, 2012-2015
Weyerhaeuser Graduate Fellowship Committee, CMEC, WSU, 2015-Present
Co-Mentor to Pullman High School Team, Alaska Airlines Imagine Tomorrow 2016, WSU
Judging Panel, WSU's Imagine Tomorrow 2009-2011
Member of Organizing Committee, CAHNRS/WSU Extension All Faculty Conference, 2011
Judge for WSU's Wiley Research Expo 2010
Member of CEE Graduate Committee, 2010-Present
Member, WSU Extension Energy Taskforce, 2007-2008
Member, CDPE-Extension Advisory Committee, 2007-2008
Member, Advisory Committee for Extension Meeting Management and Program Support (EMMPS), WSU Extension, 2005-2006
Faculty Advisor, India Student Association, WSU, 2003-2004
Search committees at Washington State University
- Member, CEE Faculty Search Committee for Sustainable, Smart, and a Resilient Infrastructure, 2017
- Member, Mechanical & Materials Engineering, Composite Materials Search Committee, 2014-2015
- Member, CEE Faculty Search Committee for Structural Engineering and Advanced Composite Materials Positions, 2013-2014
- Member, Kitsap Extension/CED Faculty Search Committee, WSU Extension Community and Economic Development Program Unit, 2013-2014
- Chair, Search Committee for Assistant Research Professor/Extension Specialist, Composite Materials and Engineering Center (CMEC), 2007
- Member, Search Committee for Conference Manager, EMMPS, WSU Extension, 2004
- Member, Search Committee for faculty position in composite materials, CMEC, 2003-2004

PROFESSIONAL MEMBERSHIPS

Forest Products Society (FPS), 1982-Present
Society of Wood Science & Technology (SWST), 2000-Present
American Society of Civil Engineers (ASCE), 2009-2010 and 2016-Present

PROFESSIONAL SOCIETY ACTIVITIES

Forest Products Society

Chair, Structural Composites Technical Interest Group under Composites & Manufactured Products Division, 2008-Present

- Organized and chaired two sessions on *Manufacturing and Product Innovation: Material and Structural Characterization, modeling, and experimental evaluation*. 63rd International Convention of the Forest Products Society, Boise, ID, 2009
- Organized and co-chaired two sessions on *High-Performance Structural Panels for Efficient Building Envelopes – New Materials, Designs, and Testing and Evaluation.* 66th International Convention of the Forest Products Society, Washington DC, 2012

Vice-Chair, Structural Panels Technical Interest Group under Composites & Manufactured Products Division, 2005-2007
International Nomination Committee Member, Forest Products Society
Wood Award Committee Member, 2006-2007

Society of Wood Science and Technology

Executive Board Member, 2008-2010
Board Liaison for Marra Award and Visiting Scientist Committees, 2008-2010
Chair of the Session titled "*Role of Nanotechnology in Green Materials and Sustainable Construction,*" the Joint International Conference of Society of Wood Science and Technology and the UNECE Timber Committee, Geneva, Switzerland, 2010.

American Society of Civil Engineers

Scriber, ASCE Wood Engineering Research Needs Workshop, Vancouver, Canada, 2008

American Furniture Manufacturer's Association

Served on Joint Industry Foam and Fiber Standards and Guidelines Committee, 1992-1998