

Biography

Eva Haviarova, Ph.D.

Director, Wood Research Laboratory
Department of Forestry and Natural Resources
Purdue University



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Dr. Eva Haviarova, is an associate professor of Wood Products Engineering and Furniture Strength Design in the Department of Forestry and Natural Resources, Purdue University. She is responsible for teaching, research and outreach. She is conducting research in areas of Furniture Strength Design, Sustainable Product Development, Design and Development of Low Cost Furniture for Underprivileged, Design of Light Timber Frame Structures, and Global Sustainability Issues. She has published over 40 peer-reviewed publications and over 150 professional presentations. Through her outreach activities, she is working with the forest products industry. Dr. Haviarova is also a director of The Wood Research Laboratory at Purdue.

Research Expertise

Dr. Haviarova is a wood scientist and product designer specializing in strength design and design for the environment.

Education and Training

Ph.D., 2000, Wood Science and Technology, Purdue University, IN
B.S., 1992, Wood Products & Furniture Design, Technical University of Zvolen, Slovakia

Awards and Honors

2009 President's Award - In recognition of exceptional contributions to Indiana's forest products industry and to the members of the Indiana Hardwood Lumbermen's Association. IHLA Annual Convention, Indianapolis, IN.

Research and Professional Experience

2009-present Associate Professor, Department Forestry and Natural Resources, Purdue Univ.
Through her outreach activities she is working on forest products industry advancement projects and woody biomass utilization. She is also conducting research in Small Diameter Timber Processing and Product Development.
1994-2009 Assistant Professor, Department of Forestry and Natural Resources, Purdue Univ.
2004-present Director of Wood Research Laboratory, Department of Forestry and Natural Resources, Purdue Univ., Lafayette, IN
2001-2004 Manager and Director of Wood Research Laboratory, Department of Forestry and Natural Resources, Purdue Univ., Lafayette, IN

1995-1997 Graduate Research Assistant, School of Forestry Wildlife and Fisheries, Louisiana State University, Researched biomass utilization and supply chain for forest products industry in Louisiana State.

1997-1993 Graduate Research Assistant, School of Wood Science and Technology, Technical University, Zvolen, Slovakia, Researched use of alternative woody materials in furniture production.

Grant Support

USDA Forest Service; PI; Creation of IN Forest Products Web Community	2006-2008
Center for Advanced Mfg.; PI; Creation of IN Forest Products Web	2006-2008
National Science Foundation; PI; International Twinning Program	2006-2008
Center for Advanced Mfg.; PI; Value-Added Agriculture	2007-2008
USDA Forest Service; Researcher; Visualization for Veneer Industry	2008-2010
Sustainable Hardwood Ecosystem; CO-PI; Woody Biomass Use	2009-2012
Sun grant – NIFA, Biomass Calculator	2014-2016
FSMP – USDA Forest Service	2016-2018

Selected Research Publications:

1. Quesada, H., E. Haviarova, and I. Slaven. 2009 Research Conducted in Forestry and Secondary Wood Products Industry in Central America and Costa Rica: Value-added analysis. *The Journal of Forest Products Business Research*. Electronic Volume 6, Article 4.
2. Erdil, Y., C., Eckelman, and E. Haviarova. 2009. Design and Construction of School Work Table for Developing Countries. *Forest Products Journal*. 59(1/2):50-56.
3. Haviarova, E. and C. Eckelman. 2009. Semi-rigid Connection Factors for Small Round Mortise and Tenon Joints. *Forest Products Journal*. 59(9):1-6.
4. Šimek, M, E. Haviarova, and C. Eckelman. 2009. Bending Moment Resistance of Ready-to-Assemble Furniture Joints. *Wood and Fiber Science*. 42(1):92-98.
5. Eckelman C. A. and E. Haviarova 2011. Withdrawal Capacity of Joints Constructed with 9.5-mm and 15.9-mm Through-Bolts and Nominal Diameter 15-mm and 25-mm Pipe-Nut Connectors. *Forest Products Journal*. 61(3):257-264.
6. Eckelman, C. A. and E. Haviarova 2011. Rectangular Mortise and Full-Width Tenon Joints in Ready-to-Assemble Light-Frame Timber Constructions. *Wood and Fiber Science*. 43(4):346-352.
7. Likos, E. and E. Haviarova, C. A. Eckelman, Y. Z. Erdil, A. Ozcifci. 2012. Effect of Tenon Geometry, Grain Orientation, and Shoulders on Bending Moment Capacity of Mortise and Tenon Joints. *Wood and Fiber Science* 43(4):462-469.
8. Haviarova, E. and F. Zhao. 2012. LCA Supported Sustainable Product Development for Furniture Industry. Paper presented at IUFRO Division 5 Conference, Estoril, Portugal, proceedings.
9. Haviarova, E. 2012. Wood, the Most Interesting, Innovative and the Best Material for our Society, Annual Meeting - Society of Wood Science and Technology, Beijing, China, CD ROM.
10. Likos, E. and E. Haviarova, C. A. Eckelman, Y. Z. Erdil, A. Ozcifci. 2013. Static versus cyclic load capacity of side chairs constructed with mortise and tenon joints. *Wood and Fiber Science* 45(2):1-<http://www.swst.org/publications/wfs/prepublications.html>.

11. Koreny, A., M. Simek, C. A. Eckelman, E. Haviarova. 2013. Mechanical Properties of Knock-down Joints in Honeycomb Panels, *BioResources*, Vol 8(4), 4873-4882. <http://ojs.cnr.ncsu.edu/index.php/BioRes/index>
12. Likos, E., Eckelman, C. A., E. Haviarova, Y. Erdil, and A. Ozcifci. 2013. Static versus Cyclic Load Capacity of Side Chairs Constructed with Mortise and Tenon Joints. *Wood and Fiber Science* Vol. 45 (2):1:6.
13. Koreny, A., M. Simek, C. A. Eckelman, E. Haviarova. 2013. Mechanical Properties of Knock-down Joints in Honeycomb Panels, *BioResources*, Vol. 8(4), 4873-4882. <http://ojs.cnr.ncsu.edu/index.php/BioRes/index>
14. Kasal, A., Haviarova, E., Efe, H., Eckelman, C. and Y. Erdil. 2014. Effect of adhesive type and tenon size on bending moment capacity and rigidity of t-shaped furniture joints constructed of Turkish beech and scots pine. *Wood and Fiber Science* Vol. 45(3):287-293.
15. Uysal, M., Haviarova, E. and C. Eckelman. 2015. A comparison of the cyclic durability, ease of disassembly, repair, and reuse of parts of wooden chair frames. *Materials and Design*, Vol. 87, 75-81. <http://www.sciencedirect.com/science/article/pii/S0264127515302598>
16. Eckelman, C. A. and E. Haviarova. 2015. Withdrawal and Compression Tests of Pinned-End-to-End Round Mortise and Tenon Joints. *Wood and Fiber Science* 47(3): 217-224.
17. Kasal, A., Eckelman, C., E. Haviarova, Y. Z. Erdil, and I. Yalcin. 2015. Bending Moment Capacities of L-Shaped Mortise and Tenon Joints under Compression and Tension Loadings. *Bio-resources*. *BioResources* 10(4): 7009-7020. <http://ojs.cnr.ncsu.edu/index.php/BioRes/index>
18. Gaff, M., Gašparík, M., Borůvka, V., and E. Haviarová, 2015. Stress Simulation in Layered Wood-based Materials under Mechanical Loading. *Materials and Design*, Vol. 87, 1065-1071. <http://www.sciencedirect.com/science/article/pii/S0264127515303786>
19. Kasal, A., Tolga Kuşkun, C., **E. Haviarova**, and Y. Z. Erdil 2016. Static Front to Back Loading Capacity of Wood Chairs and Relationship between Chair Strength and Individual Joint Strength. *Bio-Resources* 10(4): 9359-9372.

Selected Refereed Research Proceedings

1. Haviarova, E. and J. Bois, H.P. Quesada. 2013. Development of Optimal Forest Products Supported by LCA, In: *Proceedings of ISCHP 2013 – 4th International Scientific Conference on Hardwood Processing*. Florence, Italy, pp.327-334.
2. Gazo, R., Vanek, J., Abdul-Masih, M., Haviarova, E., and B. Benes. 2013. An Efficient Pith Detection for Computer Tomography Scanned Logs Using CUDA. *International IUFRO In: Proceedings of MeMo Wood – Measurement methods and modeling approaches for predicting desirable future wood properties*. Nancy, France. Electronic.
3. Haviarova, E. and H.P. Quesada. 2014. Incorporating Experiential Learning and Education for Sustainable Development into Study Abroad Programs. *Sustainable Resources and Technology for Forest Products. Proceedings of 57th International Convention of Society of Wood Science and Technology, Zvolen Slovakia, 2014* 1-8pg.
4. Uysal, M. E. Haviarova and C. A. Eckelman 2014. Furniture Design and Product Development Principles Considering End-of-Life Options and Design for Environment Strategies. *Sustainable Resources and Technology for Forest Products. Proceedings of 57th International Convention of Society of Wood Science and Technology, Zvolen*

Slovakia, 2014 1-8pg.

5. Haviarova, E. 2015. Sustainable Products Development and Wood Based Products. Healthy Houses - Healthy Interior 2015, Bratislava, Slovakia. Pg.1-9.

Selected Peer Reviewed Extension Publications

1. Haviarova, E. and C.A. Eckelman. 2014. Light-Timber Frames for Transitional Disaster-Relief Housing. Extension Publication FNR-493-W, Purdue University, Lafayette, IN. 6 pg. https://mdc.itap.purdue.edu/item.asp?Item_Number=FNR-493-W
2. Haviarova, C. A. Eckelman and D. E. Warner. 2014. How to Build a Simple Chair for Schools or Homes in Disadvantaged Areas of the World Using Local Resources and Low-End Technology. Extension Publication FNR-499-W, Purdue University, Lafayette, IN. 6 pg. https://mdc.itap.purdue.edu/item.asp?Item_Number=FNR-499-W

Courses Taught with Administrative or Supervisory Responsibility

FNR 230	World Forests and Society (3 cr.), coordinating 20 guest speakers and teaching more than 40% of lectures, 2005-present
FNR 419	Furniture Strength Design (3 cr., 3 hr. lab), 2005-present
FNR 494	Furniture for CNC Manufacturing - approximately 33% of class content, 2004-present)
FNR 30200	Global Sustainability Issues (2 cr.) 2014, 2015
SA/FNR	Global Sustainability Issues in Latin America – Study Abroad (1 cr.)

SERVICE

Committee Involvement

Department:

- Awards Committee 2006 – 2014
- Equipment Committee 2001 – present
- International Programs Committee 2006 – 2014
- Undergraduate Recruiting 2004 – present
- Curriculum Committee 2014 – present
- Promotion Committee
- Manage WRL Lab technician and several student research workers
- FNR symposium posters judge
- WRL/FNR tours organizer

College:

- Equipment Committee 2011-present
- Diversity and Action Team 2011-2014

Membership in Professional and Scientific Societies

- Forest Products Society (International Professional Organization)
 - member since 1996

- elected **board member** 2008 – 2011
- **Ohio Valley Section of Forest Products Society**
 - member since 2004
- **Purdue University Student Chapter of Forest Products Society**
 - faculty co-advisor 2005 – present
- Society of Wood Science and Technology (International Professional Organization)
 - member since 1996 – present
 - elected **board member** 2008 – 2009
 - education committee 2008 – present
- Consortium for Research on Renewable Materials (CORRIM)
 - **board member** 2012 – present
- Indiana Hardwood Lumbermen’s Association
 - member 2004 – present
 - education committee 2006 – present (helping with promotion and student recruitment).

Membership:

Forest Products Society (elected Board Member 2008 – 2011); Society of Wood Science and Technology (elected Board Director 2007 – 2009); Xi Sigma Pi Forestry Honor Society; Ohio Valley Section of Forest Products Society; North American Colleges and Teachers of Agriculture, Indiana Hardwood Lumbermen’s Association.