

JEFFREY J. SLAHOR

EDUCATION

1999: M.S., Wood Industries, West Virginia University, Morgantown, WV
1987: B.S. Forestry, Wood Products Utilization, University of Maine,
Orono, ME. (3.67 GPA)

EMPLOYMENT

Aug., 1991 - Present - Research Instructor/Wood Technologist, Appalachian Hardwood Center, West Virginia University, Morgantown, WV. Responsibilities include developing proposals for research projects, implementing experimental methods, writing reports, ensuring deliverables are submitted to sponsoring agencies on time and within budget. Research projects require both critical and creative thinking, combining appropriate personnel and materials required to bring projects to successful completion.

June, 1988 - Dec., 1990 - Research Assistant, Wood Science, University of Maine, Orono, ME. Responsibilities included oversight of day-to-day operations of research projects, writing technical progress reports, updates, and aiding in preparation of articles for peer review submission. Research topics included remedial treatments for utility poles with fumigant and diffusible chemicals; methods of improving preservative penetration and retention in *Picea* spp (spruce) with preservative CCA; and decay resistance testing and various mechanical property/strength testing procedures.

Sept., 1983 - Dec., 1987 - Research Assistant, University of Maine, Orono, ME. Assisted with acid deposition projects and joint forestry/wildlife research projects.
Summers 1983 – 1987 - Research Assistant with International Paper Co., Maine Bureau of Public Lands, and the Holt Research Forest.

ASSOCIATIONS

Xi Sigma Pi National Forestry Honor Fraternity (5/3/86).
Phi Kappa Phi (4/14/87).
Forest Products Society
International Forestry Quarantine Research Group
Railway Tie Association

RESEARCH

Current Projects

- Preparing for the Implementation of a Mandatory Phytosanitation Treatment for All Wood Packaging Material (WPM) in the US – Phase I \$140,323 WERC.
- Contract Wood Preservative Research (Currently for Stella Jones Corp) – Seeking an alternative for creosote \$35,000.

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Current Projects (cont.)

- Analysis of boron content in wood cores from railway ties treated with a proprietary creosote/boron solution. \$34,888 Stella Jones
- Determination of the performance of Wicktec Inc. products as a preservative against wood decay fungi and termites under laboratory conditions—Proposal Submitted to Patrick Wick, CEO (\$10,000).
- Evaluation of a proprietary wood preservative in field tests. PI—Submitted to Dr Wang for consideration of funding from Wood Utilization Research Funds (\$45,838).
- Evaluation of DIAMONDWOOD densified wood as a competitor to preservative treated southern pine decking – Co-investigator. Submitted to Dr Wang for consideration of funding from Wood Utilization Research Funds (\$44,831).
- Other work being developed with Stella Jones Corp—
 - 1) Emulsion control whether oil-water or water-oil they prevent proper separation in our creosote and penta treating systems formed by wood extractives and pumping methods, how do we break them?
 - 2) Increasing the solubility, reducing odor and increasing the flashpoint of conventional fuel oils with side chain additions.
 - 3) Termite testing on the efficacy of the new type of treatment we have available.
 - 4) Fluid dynamics modeling of our cylinder systems.
 - 5) Updating of the 3-D finite stress model we have available for structural analysis.
 - Analysis of preservative treated teak—commonly used in African countries such as Ghana

Completed Projects

- Use of non-destructive spectroscopy methods for identifying wood species “in-line” during lumber sawing and manufacture of various wood products; USDA Wood Education and Resource Center (WERC); \$40,000—Rapid Identification and Segregation of Railroad Hardwood Ties by Species Using a Non-Destructive Method
- Web based survey investigating problems incurred by wood packaging manufacturers applying ISPM 15 stamp
- Sanitation of wood packaging material for supplying manufacturers for international trade - technology transfer via website
- Using wood fiber to ameliorate acid mine drainage; Cross-cutting Technology at the Development Center for Advanced Separation Technologies, Blacksburg, VA, Virginia Polytechnic Institute and State University; \$149,209.
- Using wood “waste” as an alternative fuel for heat and electricity in small to mid-sized commercial and institutional buildings; technology transfer via regional conference; “WV Development Office”
- Investigation of non-destructive techniques for determining decay/defect in standing timber; USDA Forest Service; \$35,000.

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Completed Projects (cont.)

- Sanitation of wood packaging material for international trade via heat treatment of wood material using hot water bath as opposed to commonly used hot air systems; WERC; \$35,000.
- Preservative treatment evaluation of several Appalachian wood species in relation to treatability and durability; USDA FS Forest Products Laboratory; \$300,000.

Refereed PUBLICATIONS

Hassler C. C., S. Grushecky, J. **Slahor**, and P. Turk. An Assessment of the Impacts of a Domestic Treatment Regulation for Wood Packaging Material Manufacturers. **2010**. Forest Products Journal 60(4): 309-314.

Nkansah, Kofi, Benjamin Dawson-Andoh and Jeffrey **Slahor**. Rapid characterization of biomass using near infrared spectroscopy coupled with multivariate data analysis: Part 1. Yellow-poplar (*Liriodendron tulipifera* L.)" publication on line in Bioresource Technology 101 (**2010**) 4570-4576.

Adedipe, O.C., B. Dawson-Andoh, J. **Slahor**, and L. Osborn. Classification of Red Oak (*Quercus rubra*) and White Oak (*Quercus alba*) using a NIR Spectrometer and Soft Independent Modeling of Class Analogies. Journal of Near Infrared Spectroscopy. 2008. Vol. 16: 49-57.

Slahor, J.J., L.E. Osborn, E.T. Cesa, B. Dawson-Andoh, E. Lang, and S. Grushecky. Using a Hot Water Bath as an Alternative Phytosanitation Method for Wood Packaging Material. 2005. Forest Products Journal 55(4): 59-61.

Dawson-Andoh, B. E., J.J. **Slahor**, L. Osborn, and L. McDonald. 2002. Effect of Pre-Extraction by Different Solvent Systems on Leaching of CCA Components From Treated Appalachian Hardwoods. Forest Products Journal 52(10): 62-66.

Slahor, J.J., C.C. Hassler, and B. Dawson-Andoh. 2001. The Durability of Yellow-Poplar and American Beech Treated With Chromated Copper Arsenate. Forest Products Journal 51(4): 62-66.

Slahor, J.J., H. M. Barnes , B. Dawson-Andoh, T. L. Amburgey, and C.C. Hassler. 2001. The Durability of Yellow-Poplar and American Beech Treated With Creosote and Borate. Forest Products Journal 51(7/8): 51-55.

Hassler C.C., **Slahor**, J.J., R.C. DeGroot, and D.J. Gardner. 1999. A Comparison of the Treatability of Southern Yellow Pine to Five Appalachian Hardwoods. Forest Products Journal 49(2): 89-93.

Slahor, J.J., C.C. Hassler, R.C. De Groot, and D.J. Gardner. 1998. Treatability of Five Appalachian Wood Species With Creosote and Timbor®. American Wood Preservers Association Proceedings, Ninety-Fourth Annual Meeting.

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Refereed PUBLICATIONS (cont.)

Hassler C.C., **Slahor**, J.J., R.C. DeGroot, and D.J. Gardner. 1998. Preservative Treatment Evaluation of Five Appalachian Hardwoods at Two Moisture Contents. *Forest Products Journal* 48(7/8): 37-42.

Slahor, J.J., C.C. Hassler, R.C. DeGroot, and D.J. Gardner. 1997. Preservative Treatment Evaluation with CCA and ACQ-B of Four Appalachian Wood Species for Use in Timber Transportation Structures. *Forest Products Journal* 47(9): 33-42.

Slahor, J.J., C.C. Hassler, R.C. DeGroot, and D.J. Gardner. 1997. Preservative Treatment Evaluation of Red Maple and Yellow-Poplar with ACQ-B. *Forest Products Journal* 47(4): 50-54.

Goodell, B., J. Liu, and J. **Slahor** 1995. Evaluation of Diffusible Preservatives Using an Accelerated Field Simulator. *Forest Products Journal* 45(6): 74-76.

Technology Transfer

Creation and maintenance of a website (through 2009), Wood Packaging Material—piggybacking on the AHC website, for the dissemination of the most current information related to international rules governing phytosanitation requirements for wood packaging material. With the funding of a project related to similar domestic requirements this has been revived and is being made current.

Naturally Durable Wood, Appalachian Hardwood Center Fact Sheet 2007, 4pp.

Design and Feasibility Analysis for a Hot Water Bath Facility That Sanitizes Wood Packaging Material. 2004. 15 pp.

Case Studies on Wood Biomass Use in the Northeastern United States. 2004. 31 pp.

Preventing Wood Deterioration. Appalachian Hardwood Center Fact Sheet Vol. 04-2. 2 pp.

Wood Preservatives. Appalachian Hardwood Center Fact Sheet Vol. 04-3. 2pp.

A Survey of the Wood Treating Industry of West Virginia: 1991 versus 1997. **Slahor**, J.J., C.C. Hassler. 1999. *Crossties* 80(6): 24-25.

Leaching of Copper, Chromium, and Arsenic from CCA Treated Hardwood Lumber. Gardner, D.J. and J. **Slahor**. National Research Center for Coal and Energy, 1995. OSP#68-211/WRI103.

Wood Preservation-Timber Bridges. **Slahor**, J.J., Herman C. Sims, and Curt C. Hassler. Submitted to U.S. Forest Service-Timber Bridge Initiative Program. January 1995 10pp.

Fixation of Chromated Copper Arsenate (CCA) in Selected Appalachian Hardwoods. Gardner, D.J. and J.J. **Slahor**. In "Opportunities For The Hardwood Industry To Address

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Technology Transfer (cont.)

Environmental Challenges. Proceedings of the Twenty-Second Annual Hardwood Symposium." 1994. 91-100.

Preservative Treatment Evaluation of American Beech and Yellow-Poplar. **Slahor**, J.J., C.C. Hassler, and D.J. Gardner. Final Report submitted to: West Virginia Division of Forestry. January 1994. 48 pp.

Wood Preservation in West Virginia. **Slahor**, J.J. and C.C. Hassler. Fact Sheet #9 Appalachian Hardwood Center. 1992. 8 pp.

Efficient Utilization for Timber Bridges. Pahl, T.P., C.C. Hassler, and J. **Slahor**. Final Report Submitted to: USFS Forest Products Laboratory. April 1992. 78 pp.

Non-refereed Publications

Woodsense:Acclimating Wood: Discover the secrets for long lasting projects— Wood Craft Magazine Feb/Mar 2009

Woodsense:Red Oak— Wood Craft Magazine Apr/May 2009

Based on the creation (Sept 2006) and maintenance of a web page, "Wood Packaging Material" piggybacking on the AHC website, and initially disseminated via e-mail Listserv created (2005) and regularly maintained through 2009:

Bulletins—generally cover one topic.

- Number 4, March 2009, New Heat Chamber Regulations
- Number 3, January 2009, EU Debarking/Bark Free Regulations
- Number 2, October 2005, last updated 12/2007 "Accredited Inspection Agencies for Heat Treated Wood Packaging Material".
- Number 1, November 2005, last updated 12/2007 "Custom Heat Treating Facilities".

Newsletters –generally cover multiple topics.

- Volume 1, Number 1 September 2005. An introduction to the AHC informational website, creation of the Listserv, results of a 2005 wood packaging manufacturers Awareness Survey, results of a similar survey of exporters using wood packaging material (WPM), and a current update on the status of the level of implementation and enforcement to be found with (at the time) 30 countries.
- Volume 1, Number 2 January 2006. An alert to new requirements for WPM entering China, a detailed explanation of the status of US implementation especially as it affected trade between US and Canada or Mexico.

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Non-refereed Publications—Newsletters (cont.)

- Volume 1, Number 3 March 2006. A detailed explanation of current interpretation of rules specific to dunnage, proposed and imminent implementation of a new “bark free” rule for all WPM entering the European Union (critical to hardwood WPM manufacturers and consumers), proposed new methyl bromide fumigation rules, and more current country by country updates.
- Volume 1, Number 4 November 2006. Announcement of the newly established webpage (piggybacking on the AHC website), alert that the previously proposed new rules for methyl bromide fumigation had been accepted and were currently in effect, and more current country by country updates.
- Volume 2, Number 1 June 2007. Presented a review of several topics germane to WPM covered by the Technical Panel on Forest Quarantine (TPFQ) which works under the umbrella of the International Forestry Quarantine Research Group (IFQRG) which, in turn, was created to address the forestry related topics covered by the International Plant Protection Convention (IPPC). Those topics included the status of the debarked/bark free debate, possible alternative acceptable phytosanitation treatment methods, possible best management practices, an update on standardized marking, and an update on methyl bromide use.
- Volume 2, Number 2 December 2007. IFQRG sought to clarify the debarked/bark free issue by producing a supplement to the Glossary of Phytosanitation Terms which is currently circulating for signatory comment. Also presented the results of bark occurrence surveys, explained guidelines for liquidated damages and penalties on WPM and updates on the Asian long horned beetle, emerald ash borer, export certification, and methyl bromide use.

Service

October 2010 Railway Tie Symposium and Technical Conference. Presentation “An Operational Enhancement from Two Step Borate to One Step Borate for Treated Wood”

June 2010 Joint Cooperative Forest Management (CFM) Committee/Forest Utilization Committee Meeting. Presentation on status of federal rules requiring phytosanitation treatment of all domestic wood packaging material moving interstate.

2009 Railway Tie Symposium and Technical Conference

Participating expert in “Expert Elicitation Services for Solid Wood Packaging Materials” survey and conference calls carried out by RTI International, Research Triangle Park NC—Final report September 2009.

July 25, 2007 -- “Removal of Metal Ions from Acid Mine Drainage Using Lignocellulosic Material” to the 2007 workshop of The Center for Advanced Separation Technologies (CAST) at Virginia Tech.

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Service (cont.)

June 2007 -- Poster at FPJ meeting Knoxville TN. Classification of Red Oak (*Quercus rubra*) and White Oak (*Quercus alba*) Using a NIR Spectrometer and Soft Independent Modeling of Class Analogies

1993 -- Slide show to Burke-Parsons Bowlby Corporate – Status of Wood Preservation Research at WVU.

2004 –Poster -- On the newly created website “Managing Your Woodlot” at the annual meeting of the Maryland Foresters Association.

2001–2003 -- Conducted 6 (each with multiple individuals) hearing tests per year for loggers, arranged by WVFA.

1998 – Research Paper -- Treatability of Five Appalachian Wood Species with Creosote and Timbor to the American Wood Preservers Association, Ninety-Fourth Annual Meeting, Scottsdale, AZ.

1996 – Research Paper -- Preservative Treatment Evaluation of Red Maple and Yellow-Poplar with ACQ-B to the first national meeting on the Timber Bridge Initiative, Madison WI.

1994 – Research Paper -- Fixation of Chromated Copper Arsenate (CCA) in Selected Appalachian Hardwoods to the Twenty-Second Annual Hardwood Symposium, Richmond, VA.

1993 – Slide show to Burke-Parsons Bowlby Corporation on “The Status of Wood Preservation Research at WVU.”

1991–1994 -- Assisted in the yearly preparation of Sara Title III Toxic Release Inventory (TRI) Form R “Right to Know” reports to the EPA for Burke-Parsons Bowlby wood preservative treatment plants in Spencer, WV, Goshen, VA, Dubois, PA, and Stanton, KY.

Teaching

Co-instructor WDSC 351 (10%) beginning 2011.

Pesticide Applicator Recertification Class, Dec 2010, 7 participants, Sole Instructor (100%)

September, 2010 -- Wood Science Seminar WDSC 494 “Wood as a Building Material.”

Pesticide Applicator Recertification Class, Nov 2009, 7 participants, Sole Instructor (100%)

November 6, 2008 -- Pesticide re-certification class presented in Sutton, WV for licensed pesticide applicators and technicians.

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Teaching (cont.)

September 12, 2008 -- Wood Science Seminar WDSC 494 "Wood as a Building Material."

November 7, 2007 -- Pesticide re-certification class presented in Sutton, WV for licensed pesticide applicators and technicians.

Spring Semester 2007 – Laboratory sections of WDSC 351 *Forest Products Protection*, involving preservative treatment and evaluation of wood.

September 2007 -- Wood Science Seminar WDSC 494 "The Impact of ISPM 15 Regulations on WV Wood Packaging Material Industry and the Greater Economic Concerns Derived There From."

1993/1997/2006 -- Pesticide re-certification classes taught at West Virginia Forestry Association (WVFA) annual meeting, Canaan Valley, WV.

1991–2002 -- Conducted an average of 3 first aid/CPR classes per year for loggers, arranged by WVFA.