



INSIDE VT WOOD

News from Audrey Zink-Sharp, Interim Department Head

• Our heartiest **CONGRATULATIONS** to Brian Bond and Lynn Resler on the birth of their son, **Alexander Lee Bond**. Alexander weighed in at 8 lbs. 8 oz. and 21 ½ " tall, on July 12, 2010, 2:34 p.m.

• Congress recently passed a bill that puts limits on formaldehyde in certain wood-based composites. Have a look at this website for more information:

http://greensource.construction.com/news/2010/100719Formaldehyde_Limits.asp

• Start of classes is just around the corner. Fall semester 2010 classes will begin Monday, August 23. We are looking forward to everyone returning to campus and starting a new semester together.

• Forest Products Outreach through Engineering at Virginia Tech

Phil Araman

Forest Service Research at the Brooks Center in Blacksburg, VA (Phil Araman) and the Wood Science and Forest Products Department (Dan Hindman) hosted two groups of college bound high school students at their “Green Home Construction Research Site” in June 2010. The Blacksburg, VA site is an EarthCraft housing development called Mt. Tabor Meadows. We have been analyzing all wood construction waste from each home and developing recycling options to keep the materials from landfills. A second phase of the research will be to reduce wood waste generated for each home. The research is a cooperative effort between the Forest Service and Wood Science and Forest Products Department. The high school students are from several states and are participating in the C-Tech² and NASA Inspire Summer Camps at Virginia Tech. The camps are designed to inspire top students to pursue engineering and related careers.



C-Tech² students on Green Home Construction tour



We used this outreach opportunity to give them a “Green Home Construction Tour” and to promote green home building. They were impressed with our environmental based R&D. The picture on the left is the C-Tech² group of students.

The C-Tech² program is designed to increase female student enrollment in engineering and the sciences.

We also conducted sessions for these College of Engineering programs in 2009.



Presentation at Annual Meeting of the Association of Furniture Manufacturers of Québec, June 4, 2010.

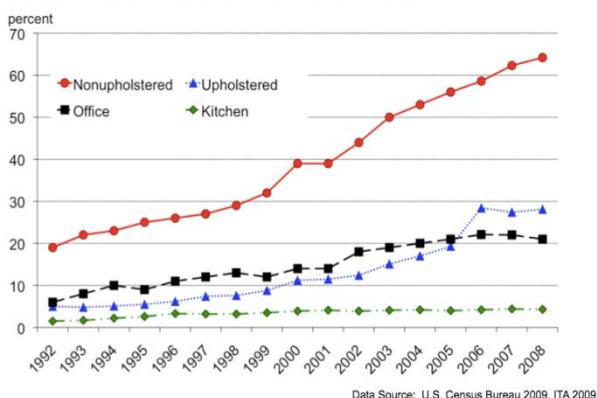
VT Wood Science faculty invited to speak at Furniture Congress

Urs Buehlmann

Wood Science and Forest Products faculty member Urs Buehlmann was invited to speak at the Annual Meeting of the Association of Furniture Manufacturers of Québec (AFMQ) held at Orford, QC on June 4, 2010. He was asked to give the furniture manufacturers of the province and Canada an update on the status of the U.S. furniture industry and retail markets. His presentation, assembled with help of his collaborators Al Schuler and Matt Bumgardner, USDA Forest Service and Torsten Lihra, FPInnovations, was entitled "*Furniture - future opportunities*" and focused on explaining the status quo of the U.S. furniture industry and discussing opportunities for furniture manufacturers and retailers.

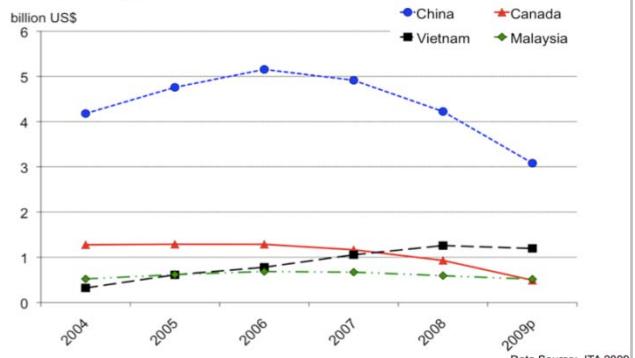
Traditional household furniture manufacturers in both, the U.S. and Canada, face difficult times. Imports from low-cost offshore countries that have built their own, export-oriented furniture industry, are at an all-time high (data only available to 2008). Almost 70 percent of all nonupholstered, solid wood household furniture sold in the U.S. are imported, while almost a third of all upholstered household furniture sold in the U.S. are imported. Office furniture are seemingly on a similar path, with imports now exceeding 20 percent. Only the kitchen cabinetry sector is performing better, with imports still being in the single digits.

U.S. market share of imports 1992 - 2008



Data Source: U.S. Census Bureau 2009, ITA 2009

Recent changes in nonupholstered household furniture imports



Data Source: ITA 2009

The presentation concluded with examples of successful furniture businesses maintaining their U.S. capacity and escaping the pressures from imported furniture. Attention was paid to the kitchen cabinet industry, with its highly developed model of mass customization or, to use a more specific example, the Herman Miller company, which has evolved from being a household furniture producer to a highly regarded office furniture manufacturer and now is morphing into a supplier of health care and retirement solutions. If interested, a copy of the presentation can be obtained by emailing Urs at buehlmann@gmail.com.

Paper makes top most downloaded articles

"A new bio-based nanocomposite: Fibrillated TEMPO-oxidized celluloses in hydroxypropylcellulose matrix" authored by Richard K. Johnson, Audrey Zink-Sharp, Scott Renneckar, and Wolfgang Glasser made the top 20 list. The paper scored among the top twenty most frequently requested scientific contributions amongst the nearly 100,000 downloaded articles published in CELLULOSE (all volumes) in 2009. There were nearly 400 requests for the full paper in one year. CELLULOSE has been the top-rated periodical in the subject categories Materials Science, Paper & Wood as well as Textiles for the past several years according to the Journal Citation Reports. Its impact factor of 1.84 exceeds that of any other journal publishing in the wood (and related sciences) fields.

VT Wood faculty invited to speak at European light-weight panel symposium

Urs Buehlmann

On June 10, 2010, Wood Science and Forest Products

faculty member Urs Buehlmann gave a presentation at the first European Symposium on furniture construction and manufacturing using lightweight panel materials in Lemgo, Germany. Leichtbau Offensive (lightweight construction program) is a program funded by the European Union and the State of North Rhine-Westphalia (Germany). The symposium attracted over 200 experts from the European furniture and wood products industries and lasted three days. Topics included the proper use of lightweight panel materials in furniture and interior design construction, characteristics of novel lightweight materials, as well as an extensive display of successful projects and products using lightweight panels.



Urs' presentation prepared with his collaborator Matt Bumgardner, USDA Forest Service, entitled "Lightweight Panel Network: Zur Entwicklung des Möbelleichtbaus in den USA (Lightweight Panel Network: Use of lightweight panels for furniture and interior design construction in the U.S.)" gave the audience an update about industry preference for using lightweight panel materials in the U.S. The figure below from Urs' presentation shows the strengths and weaknesses of lightweight panels as a material compared to other composite materials (a close substitute product for light panels) as indicated

by 141 U.S. wood industry participants surveyed in 2008. Fifty-four percent of respondents to this survey indicated they would seriously consider using such panels in their products. In particular, office/hospitality/contract furniture, as well as store and architectural fixtures, seemed to hold the most promise for the use of lightweight panels according to respondents. Overall, respondents were somewhat neutral in their perception of lightweight panels as a material for use in the wood industry, which may be due to a lack of information about the material's performance. The biggest challenges to greater adoption of lightweight panel materials in the U.S. appear to be the negative perceptions related to connecting lightweight panels to hardware and other components, issues that are being resolved by panel manufacturers.

A copy of the presentation can be obtained by emailing Urs (buehlmann@gmail.com).

Further information about the lightweight panels and the lightweight panel network can be found at

www.lightweightconstruction.org

		Possession by lightweight panels	
		Low	High
Importance to composite panels	High	<ul style="list-style-type: none">Strength of connection to other componentsStrength of hardware connection to panelEase of connecting panels to other componentsMachineability 	<ul style="list-style-type: none">Consistent quality between ordersConsistent dimensionsAbility to take surfacesStrength of panel 
	Low	<ul style="list-style-type: none">Competitive priceEase of attaching hardwareEase of edgebanding"Green" or environmentally friendlyAvailability of pre-cut panel sizes	<ul style="list-style-type: none">Consistent densityAvailability of full-sized panelsLight for production workersLight for consumers/installers

Volunteers needed for Hokie Helpers program

From: Leon McClinton, Division of Student Affairs

The Division of Students Affairs would like to invite all faculty and staff to participate in the Hokie Helpers program from **August 18-21**. The new program will bring Hokie Helpers volunteers together across campus to assist new students with move-in. Hokie Helpers was created to welcome new members of the Virginia Tech community and introduce them to the strong sense of service and spirit present on our campus. Please go to this website for additional information and to register:

www.hokiehi.nsp.vt.edu/hokiehelpers.htm.

We are asking volunteers to work at least one two-and-a-half-hour shift, during which they will help parents and students with a variety of tasks, including transporting belongings, providing refreshments, and giving directions and information. All volunteers will receive a free Hokie Hi T-shirt to make group members easily identifiable, and a ticket to eat free at the Hokie Hi Welcome Picnic on Sunday, August 22 in Lane Stadium from 4 p.m. to 6 p.m.

In addition, the April 16 Student Planning Committee is asking members of the Virginia Tech community to contribute 32 hours of community service during the 2010–2011 academic year. This initiative, entitled “32 for 32” will conclude on April 16, 2011. As you begin to think of ways that you can contribute to this endeavor, we ask that you strongly consider working several hours with the Hokie Helpers program. You can record any hours worked on the VT-ENGAGE website at www.engage.vt.edu by clicking on the “32 for 32” button.

We want to ensure that all of our students have an excellent start to the year and we are confident that this program will send a memorable, meaningful, and lasting positive message to new students and parents.

For more information, contact Leon McClinton at (540) 231-6205.



Video on moving off campus offers advice for first-time renters

From: Division of Student Affairs

Moving off campus video offers advice for first-time renters

Students curious about off-campus housing have a creative resource to turn to for information about rental housing in the Blacksburg community. Virginia Tech's "Moving Off Campus: Play by Play" video provides an entertaining look at the rewards and challenges student renters face.

Watch online: [Moving Off Campus: Play by Play](#)

With a blend of humor, reality-TV, and sports commentary styles, the 17-minute video covers the resources offered in the Blacksburg community along with details about signing a lease, being a good neighbor, and dealing with laws and local regulations.

The video is made possible by a grant from the Virginia Tech Parents Fund, was a collaborative project among the [Division of Student Affairs](#), the Town/Gown Community Relations Committee of Blacksburg, the New River Valley Apartment Council, Rolland Moore West NBhd Network (Fort Collins, Colorado), the HHunt Company, and Virginia Tech's [University Unions and Student Activities](#).

For more information, contact Rachel DeLauder at (540) 231-6429.

Upcoming workshops

Learning to See

This workshop teaches the use of Value Stream Mapping (VSM) for practitioners as a tool to identify waste in processes and to improve operational performance.

Date and Location: August 5, 2010. Harrisonburg, VA.

Registration: \$99 includes refreshments and dinner. See <http://www.woodscience.vt.edu/learntosee/> or email Urs Buehlmann (buehlmann@gmail.com) for more information.

Lean Management, Total Productive Maintenance (TPM), Six Sigma and How They Work Together to Improve Your Results

This workshop provides participants with the fundamentals of Lean Management, Six Sigma, and Total Productive Maintenance; three inter-related management systems that can arguably be considered the foundation of achieving improved manufacturing effectiveness and flexibility, and business profitability.

Date and Location: August 25, 2010. IWF Atlanta, GA.

Registration: Register at IWF website (<http://www.iwfatlanta.com/>) or email Urs Buehlmann (buehlmann@gmail.com) for more information.

Maintenance Excellence

Total Productive Maintenance (TPM) is a method of increasing the effectiveness of production machinery and the reliability of production processes. At the same time, TPM involves production workers in the care of the machines they operate. The TPM approach strives to minimize reactive maintenance in moving toward an environment of preventive and ultimately predictive maintenance.

Date and Location: August 26, 2010. IWF Atlanta, GA.

Registration: Register at IWF website (<http://www.iwfatlanta.com/>) or email Urs Buehlmann (buehlmann@gmail.com) for more information.

Rough Mill Yield Improvement Using ROMI 3.1

The workshop is designed to help rough mill managers, supervisors, and operators to improve the performance of their rough mill, achieve reliable quality and deliveries, and decrease costs. Workshop participants will learn how to use the power of the USDA Forest Service's ROMI 3.1 rough mill simulation tool to assess improvement scenarios. Participants also will learn about the new least-cost lumber grade-mix solver function embedded in ROMI 3.1.

Date and Location: November 8, 2010. Wood Education and Resource Center (WERC) Princeton, WV.

Registration: \$49 includes refreshments and lunch. See <http://www.woodscience.vt.edu/ROMI3-1/> or email Urs Buehlmann (buehlmann@gmail.com) for more information.

