

May 2009						
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INSIDE VT WOOD

Reminder...

Remember to submit department news items by Friday 3 p.m. of each week to Will Pfeil at wpfeil@vt.edu for inclusion in Inside VT WOOD each Monday morning. All past issues of Inside VT Wood reside on our department website under the [publications link](#).

News From Paul Winistorfer

- Thanks to Don Bright, General Manager of Morgan Lumber Company and Hokie class of 1998 who visited our department last Monday, April 27 to talk with students in our forest products marketing class. Morgan Lumber Company and the Morgan Lumber Company management team provide endowed scholarships in our department and our student recipients this year have been Brian Thompson and Chris Rider. Thanks Don and all our friends at Morgan Lumber for your continued support of our program.



- Undergraduate students – if you are confused about fall courses in the department please see your advisor, Dr. Audrey Zink-Sharp or myself. We can easily explain current and planned changes in our curriculum. Soon, curriculum and course changes will be showing up on our website as we update materials.
- Our department scholarship deadline is approaching! You can access our online scholarship application via our department webpage on the '[student](#)' link. Our preference is to receive your application online. We are extending the application deadline to June 1 this year to encourage you to apply. You will be notified over the summer months regarding your application. You will be recognized and expected to participate in our Wood Week 2009 Scholarship Recognition Reception to be held in early September as part of our Wood Week activities. Do not miss this opportunity to apply for scholarship support provided by our generous partners and friends of the department.

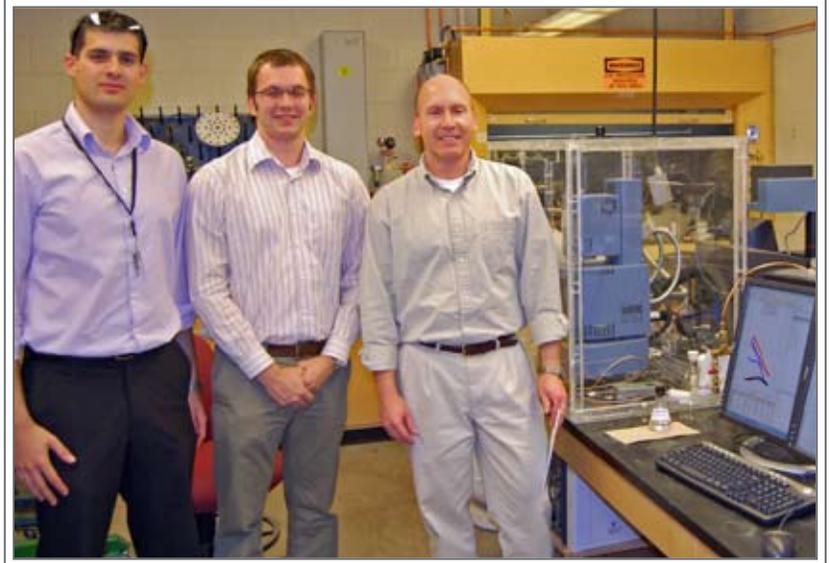
MAY

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We will have a special seminar on Friday May 8th at 10 a.m. in the Brooks Classroom by a visiting scholar Timo Gruneberg from Georg August University in Goettingen, Germany. Dr. Tom Hammett recently visited there and invited Timo to visit our department. The title of his presentation is "Improvement of dimensional stability and other selected material properties of extruded wood polymer composites". All are invited to attend.

NC State Collaborators Visit for Experimental Marathon

NC State graduate students Balazs Horvath and Laszlo Horvath visited Chip Frazier's laboratory two weeks ago for a research collaboration. Balazs and Laszlo are students of Drs. Perry Peralta and Ilona Peszlen at NC. State. They are studying the rheological properties of genetically transformed poplar wood, and were in town to try the methods that Frazier's group has developed. Having many specimens and little time, they were afforded exclusive access to two rheometers for 4 days. Balazs and Laszlo were operating continuously for 4 days in tag-team fashion. During that period, they managed to make time for a mini-symposium and also a bonfire dinner party, all with Frazier's group. The work was hard and the beer was cold; good times and outstanding results were had by all.



L-R: Laszlo Horvath, Balazs Horvath, and Dr. Chip Frazier

Jackson Table Takes Shape

Student Andrew Jackson (packaging science) is nearing completion of his table for the Association of Woodworking and Furnishings Suppliers (www.awfs.org) student design competition to be held in July in Las Vegas. Andrew has no previous woodworking experience. This table includes all hand cut dovetails, hand planed top, and hand machined cabriole legs. The table is made from black cherry (*Prunus serotina*). We are proud of this extra effort by Andrew and acknowledge the helpful assistance and guidance of David Jones - our master woodworker and wood shop manager.



Pallet Reuse and Recycling Workshop Held in Chesapeake, Va

Pallets commingled with municipal solid waste (MSW) cause the Southeastern Public Service Authority (SPSA) in Chesapeake, VA a sizeable amount of hassles, as they have to be removed from the overall waste stream that feeds into the authorities' waste-to-energy Refuse Derived Fuel Plant (RDF) powering the US Navy's Norfolk Navy Shipyard by manual labor. Those pallets, for lack of a better solution, then have to be landfilled at the SPSA's 833 acre regional landfill in Suffolk, VA, a costly and wasteful solution.

The pallet re-use and recycling workshop held in Chesapeake, VA on April 9, 2009 addressed the need of SPSA to find a solution for their problems with pallets being fed to their operations commingled with the MSW stream, among many other things. If local pallets or wood recyclers have use of the discarded pallets, they



would not end up in the MSW stream, said John Duke of SPSA in his presentation. Joe Benedetto from Third Capital/RDS, a local recycler, agreed with John's view, but pointed out the logistical problems of collection pallets at SPSA's operations. A better solution would be to encourage pallet users, who ultimately discard the pallets into the waste stream, to bring the pallets to local recyclers instead of feeding them to SPSA. To which Ray Etheridge, receiving manager at Paxton Company, a local supplier of parts for the professional and private maritime industry, pointed out he lacked the intelligence to know where he could discard his three to four trailer loads of pallets per month to a recycler, eliminating his need to dump them at the SPSA landfill. For Ray, by getting him in touch with local pallet and wood recyclers, the workshop provided an instant solution to his pallet disposal problem. This will make John's job at SPSA easier, as fewer pallets will have to be pulled out of the MSW waste stream. Figure 1 shows some of the participants listening to John Duke's presentation.

Hardwood Components Workshop Discusses Industry's Future

With business activities contracting, residential housing markets down by more than 50%, and offshore producers fighting to maintain and increase their shares of the U.S. market for hardwood products, remaining competitive is no small feat for today's domestic producers of hardwood components. While there are many aspects of the current business climate that can't be controlled, over 50 participants came to the "Remaining Competitive in Hardwood Components Production" workshop at the Wood Education and Resource Center (WERC) in Princeton, WV. They came to learn more about the state of things, how it affects the industry, what other companies are doing, what the future might hold, and which opportunities may be available to them.



Industry speakers discussing the state of the industry and its future with Steve Ehle (Wood Digest) moderating. From left to right: Bill Luppold (USDA-FS), Steve Lawser (WCMA), Art Raymond (A. G. Raymond & Company, Inc.), and Al Schuler (USDA-FS).

The event was sponsored by the Forest Service's Wood Education and Resource Center (WERC), the National Hardwood Lumber Association (NHLA), the Wood Component Manufacturers Association (WCMA) and Wood Digest Magazine and organized by Virginia Tech's Department of Wood Science and Forest Products. It featured leading industry experts providing insights about the state of the economy and the state of the wood industry (Al Schuler, Bill Luppold, Steve Lawser, Art Raymond); about Lean Manufacturing (Earl Kline and Barry Thomas); and about certified, "green"

wood products (George Barrett, Margaret Fisher, Mike Snow, Catherine Mater, and Phil Araman). While the industry is clearly hurting from the nation's housing problems and an economy in recession, several speakers predicted a return to better times in the foreseeable future.

Also, the current industry shakeout will benefit the industry in the longer term, as numerous weaker industry participants closed shop and will not come back once the current problems are overcome. This will allow for a strong recovery for the remaining industry participants.

What makes an industry-leading manufacturing plant could be observed when visiting Merillat's cabinet door plant in Atkins, VA. This Shingo-prize winning lean facility produces and finishes cabinet doors for one of the leading kitchen manufacturers of the nation. Lean thinking is practiced throughout the plant and employees on all levels continuously improve the systems in place. Thanks to the company's unique focus on lean practices, work in process inventory (WIP) was reduced by over 90 percent, thousands of lineal feet of conveyors removed, lead time slashed from days to hours, and product variability reduced significantly.



Tool board at Merillat, Atkins, VA. Organizing and cleaning of workplaces are part of Merillat's ongoing lean effort. Key to success is to sustain improvements, according to Merillat's Barry Thomas.

Certified, "green" wood components are becoming a major business opportunity, according to the experts on the topic. However, whoever thinks that supplying certified hardwood components is done by buying and processing certified lumber from a certified supplier is living under the wrong assumptions. Becoming a producer of certified products requires the commitment from the entire company and the commitment of the necessary resources to the effort. In particular, in-house expertise needs to be built-up on certification and on the many different certification schemes being pursued by industry, associations, government, and

non-profit organizations. However, the business opportunity is real and will increase as the sensibility for sustainable living increases in society.

Experts discuss certification of wood components with the participants of the workshop. From left to right: George Barrett (Hardwood Market Review), Mike Snow (American Hardwood Export Council, AHEC), Margaret Fisher (Saunders Wood Specialties), and Catherine Mater (Mater Engineering LTD).



Video footage including all presentations and workshop information is available at: <http://www.woodscience.vt.edu/woodcomponents/> or can be ordered from Urs Buehlmann (540.231.9759, buehlmann@gmail.com).

Wood 1234 Students Show Off Their Completed Projects

Wood 1234 (Introduction to Wood Science and Forest Products) students show off their student projects in the race to finish the semester! Wood 1234 was introduced to the department curriculum 4 years ago as a fun, experiential, hands-on course about wood. The course is taught by Professor Joe Loferski and David Jones provides the most capable guidance of the student project portion of the 'lab'. David spends considerable time working one-on-one with students in development and execution of their projects. Many non-majors and university studies students enroll in this course each year. Students this year incorporated the use of the department laser engraver for customization of their projects under the guidance of Will Pfeil who assisted students with design, software and operation of the laser engraver. Great job by all involved!



L-R: Wes Maxey, Courtney Kepley, Grant Vander Kolk, Shawn Crawford, Isaac Jones, Mark McGill, Anthony Muscatello, James Lassiter, Alan Bowers, Will Rand, Lewis Aoun, Dr. Joe Loferski (Professor), Jake Forrest, Jeff Dolan, Sean Megan, Dabney Beahem, Blake Evans, Chase Stratton, David Jones (Instructor).

Manufacturing Systems Team Learns About Baseball

On Saturday, April 11, 2009, the department's manufacturing systems team set out to learn about the fascinating American past time of watching baseball games. The Salem Red Sox defeated the Frederick Keys 6-5. However, as team members not privy to the intricacies of baseball (e.g., all the foreign born team members) found out from the experts in the team (e.g. all the American born team members), there are two rules that always apply: 1) nobody ever really watches the game because everybody is busy talking, drinking, eating or something and 2) nobody ever watches a game to the end, since patience runs out before the end of the game.



VT's Department of Wood Science and Forest Products manufacturing systems team at the baseball game in Salem, VA (first row left to right: Kevin Knight, Taylor; second row left to right: Erika and Marc André Gonin, Gavin Wherry, Mathias Schmit; third row: Becky Snider, Saoudatou and Baidy Ba.

Special Seminar Announcement

Wednesday, May 8, 2009

10:00 a.m. - 11:00 a.m. Brooks Center Classroom

Seminar on Extruded Wood Polymer Composites

Timo Grueneberg, PhD student from the Department of Wood Biology and Wood Products at the Georg August University in Goettingen, Germany will present his research findings on extruded wood polymer composites on May 8, 2009 from 10:00-11:00 a.m. in the Brooks Center Classroom. The project entitled "Improvement of dimension stability and other selected material properties of extruded wood polymer composites" uses established modifications methods from solid wood for the use in wood polymer composites; specifically



Sample products made from wood polymer composites.

N-methylol-compounds, silanes, silicons and waxes for pre-treatment. With these modifications of the wood particles, it is hoped that the following properties can be enhanced:

- dimension stability
- resistance against basidiomycetes
- resistance against UV-light / weathering
- mechanical properties, substitution of coupling agents

In the first step, screenings on the effectiveness of the modification agent regarding process ability (extrusion) are done. The modification agent with the best result due to the tested properties will be used for further experiments and tests. Untreated wood particles with and without coupling agent will serve as reference; the coupling agent is powdered MAA. Additionally, biological investigations will be done, in particular on the resistance against fungi and other destroying micro-organisms. As final step, up-scaling from laboratory scale to industrial scales will be done. Also, various properties, such as physical-mechanical, water uptake, dimensional stability, biological durability and weathering will be tested.