

June 2007						
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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](mailto: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.

## Red Alert

Inside VT Wood will move to a summer publication schedule of twice per month beginning on June 1. Our weekly communication schedule will resume August 13, 2007.

- Angela Riegel will be on Annual Leave the week of June 18th – Brooks personnel plan accordingly.
- Rick Caudill will be on Annual Leave June 25 - July 9.
- Debbie Garnand will be on Annual Leave June 27 – July 8.

## News From Paul Winistorfer

• The Society of Wood Science and Technology ([www.swst.org](http://www.swst.org)) and the Forest Products Society ([www.forestprod.org](http://www.forestprod.org)) meet this week in Knoxville, TN for their annual International Conventions. In addition there is also an additional conference venue on Thursday between FPS and the Technical Association of the Pulp and Paper Industry (TAPPI) titled International Conference on Nanotechnology for the Forest Products Industry that several of our faculty and students are attending and making presentations.

Monday June 11, from 6:00 pm – 7:30 pm there is a Student/Universities Reception. We will have a department display at the event and our Wood Enterprise Institute students will be at our department table. Please come by this event and show your support for our department and students.

We will have 38 people participating this week at these meetings.

- 13 – faculty
- 17 graduate students
- 1 post doctoral scientist
- 2 research associates
- 5 undergraduate students – Wood Enterprise Institute Students

Adam Birkett	Brian Bond	Richard Bonsi	Sudip Chowdhury	Victor Cossio
Michael Elebash	Omar Espinoza	David Finkenbinder	John Foster	Chip Frazier
Tian Gao	Wolfgang Glasser	Brad Hager	Tom Hammett	Peter Hamner
Christian Heinemann	Dan Hindman	Jungki Hong (SWST)	Josh Hosen	Geza Ifju
Gi Young Jeong	Earl Kline	Fred Lamb	Zhiyuan Lin	Fernando Narvarro

Garrett Norman	Jesse Paris	Karthik Pillai	Omid Parhizkar	Brian Perkins
Dakai Ren	Scott Rennecker	Maren Roman	Bob Smith	Tim Stiess
Paul Winistorfer	Bob Youngs	Angela Zhou	Audrey Zink-Sharp	

Our department is involved in 15 oral presentation in various sessions and 9 technical forum poster presentations. Seek out your department colleagues and support them by attending their presentation session during the meetings.

Days, times and titles of our department presentations are as follows:

## **TECHNICAL FORUM PRESENTATIONS**

**Monday, June 11**

**2:45 pm - 5:00 pm**

### **Adhesives / Adhesion**

#### **An Alternative Approach to the Preparation of Double-Labeled Isocyanates**

*Dakai Ren*, Research Assistant, Dept. of Macromolecular Science & Engineering, and *Charles E. Frazier*, Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

#### **Investigating Adhesive Thermal Stability with Mode-I Fracture Testing**

*Tian Gao*, Grad. Research Assistant, and *Charles E. Frazier*, Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

#### **Small Specimen Wood Rheology: The Development of Torsional Methods on Wood Disks**

*Sudip Chowdhury*, Ph.D. Candidate, and *Charles E. Frazier*, Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**Tuesday, June 12**

**2:00 pm - 5:00 pm**

### **Management, Marketing & Economics**

#### **Introducing Lesser-Known Wood Species from Certified Forests in Bolivia to the U.S. Market**

*Victor Cassio*, Grad. Research Assistant, Dept. of Wood Science & Forest Products, *Robert L. Smith*, Prof., Dept. of Wood Science & Forest Products, and Interim Associate Dean of Extension, College of Natural Resources, and *Pablo Pinell*, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA; and Bolfor II, Santa Cruz Bolivia

#### **Improving the International Competitiveness of the Forest Products Industry Through Improved Transportation Methods**

*Omid Parhizkar*, Grad. Research Assistant, Dept. of Wood Science & Forest Products, *Robert L. Smith*, Prof., Dept. of Wood Science & Forest Products, and Interim Associate Dean of Extension, College of Natural Resources, and *Chad Miller*, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

#### **Opportunities for Business Development Utilizing Small-Diameter Timber**

*Brian R. Perkins*, Grad. Research Assistant, Dept. of Wood Science & Forest Products, and *Robert L. Smith*, Prof., Dept. of Wood Science & Forest Products, and Interim Associate Dean of Extension, College of Natural Resources, Virginia Tech, Blacksburg, VA; and *Charles W. Becker III*, Utilization & Marketing Mgr., Virginia Dept. of Forestry, Charlottesville, VA

## **Wood Engineering & Mechanical Properties**

### **Effect of Finger Jointed Southern Pine Dimension Lumber on the Flexural Strength and Stiffness of Pallet Components**

*Ralph L. Rupert*, Research Associate, *Marshall S. White*, Prof., and *Peter C. Hamner*, Research Associate, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

### **Effect of Southern Pine Dimension Lumber Grade on the Flexural Strength and Stiffness of Pallet Components**

*Ralph L. Rupert*, Research Associate, *Marshall S. White*, Prof., and *Peter C. Hamner*, Research Associate, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

### **Intra-Ring Compression Strength in Normal and Reaction Wood of Loblolly Pine**

*Audrey Zink-Sharp*, Prof., Assistant Dept. Head, Dept. of Wood Science & Forest Products, and Dir., Sustainable Engineered Materials Inst., and *Ohkyung Kwon*, Post-Doctoral Associate, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

## **TECHNICAL SESSIONS**

### **Concurrent Sessions**

#### **Monday, June 11**

**8:00 am - 11:30 am**

#### **Adhesive Characterization Techniques**

##### **Modeling Adhesive Bond Penetration for a Typical LVL Veneer Joint**

*Jong Nam Lee*, Research Scientist, Sustainable Engineered Materials Inst., and *Daniel P. Hindman*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

##### **Rheology of Polyurethane Bonded Composites**

*Christian Heinemann*, Post-Doctoral Research Associate, and *Charles E. Frazier*, Prof., Dept. of Wood Science & Forest Products, Blacksburg, VA

**8:00 am - 4:30 pm**

#### **Globalization of Forestry and the Forest Industry: Impacts and Responses**

##### **Globalizations Impact on the Marketing and Management of Forest Products Firms in the U.S.**

*Robert L. Smith*, Prof., Dept. of Wood Science & Forest Products, and Interim Associate Dean of Extension, College of Natural Resources, and *Brian R. Perkins*, Grad. Research Assistant, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

##### **Forest Industries in Other Parts of the World – Their Role in and Response to Globalization**

*A.L. (Tom) Hammett*, Prof., Dept. of Wood Science & Forest Products, and Coordinator of International Programs, College of Natural Resources, Virginia Tech, Blacksburg, VA

#### **Lean Systems to Improve Competitiveness**

*D. Earl Kline*, Prof. of Manufacturing Systems, Sloan Foundation Forest Industries Center, Virginia Tech, Blacksburg, VA

**8:30 am - 11:30 am**

#### **Current Topics in Wood Physics and Drying**

##### **Moisture Content Change During Storage, Manufacturing, and Shipping of Bolivian Wood Products**

*Omar A. Espinoza*, Grad. Research Assistant, and *Brian H. Bond*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**8:00 am – 11:30 am**

**Continuous Improvement in the Wood Products Industry**

**Rough Mill Management for the Lean Customer**

*Garrett T. Norman*, Grad. Research Assistant, Dept. of Wood Science & Forest Products, and *D. Earl Kline*, Prof. of Manufacturing Systems, Sloan Foundation Forest Industries Center, Virginia Tech, Blacksburg, VA

**2:00 pm – 4:00 pm**

**Process and Characterization of Nanocomposites**

**Tailored Wood Fiber-Reinforced Polypropylene Composites: Layer-by-Layer Self-Assembly of Polyelectrolytes and Clay Nanoplatelets**

*Zhiyuan Lin*, Ph.D Candidate and Grad. Research Assistant, and *Scott Renneckar* and *Daniel P. Hindman*, Assistant Profs., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**8:30 am - 11:30 am**

**General Topics in Wood Engineering**

**An Experimental Investigation of Structural Composite Lumber Loaded by Dowels in Perpendicular-to-Grain Orientation at Yield and Capacity**

*David E. Finkenbinder*, Grad. Research Assistant, and *Daniel P. Hindman*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**8:00 am – 11:00 am**

**General Topics in Wood Engineering**

**Effect of Intra-Ring Property Variation on Elastic Properties and Behaviors of Strand-Based Composites**

*Jong Nam Lee*, Research Scientist, Sustainable Engineered Materials Inst., and *Daniel P. Hindman*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**11:00 am – 4:15 pm**

**Design of Wooden Buildings Using Current Codes and Practices**

**An Experimental Investigation of Structural Composite Lumber Loaded by Dowels in Perpendicular-to-Grain Orientation at Yield and Capacity**

*David E. Finkenbinder*, Grad. Research Assistant, and *Daniel P. Hindman*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**3:30 pm – 4:30 pm**

**IAWS LECTURE**

**Bio-Based Materials – The Polymer and Materials Dimension of Bioresources**

*Wolfgang G. Glasser*, Prof. Emeritus, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**Concurrent Sessions**

**Wednesday, June 13**

**8:30 am – 11:30 am**

**Tools of the Trade – Methods for Successful Extension and Technology Transfer**

**Effective Delivery Methods for Forest Products Extension and Technology Transfer**

*Fred M. Lamb*, Prof. Emeritus, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

## **Application of Manufacturing Simulation Games for Change Management Training in the Wood Products Industry**

*D. Earl Kline*, Prof. of Manufacturing Systems, Sloan Foundation Forest Industries Center, Virginia Tech, Blacksburg, VA; *Brian K. Brashaw*, Dir.,

**8:30 am – 11:30 am**

### **Improving Quality and Volume Yields for Hardwoods Wood**

**Session Chair:** *Brian H. Bond*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

**Session Moderator:** *Brian H. Bond*

**8:30 am – 11:30 am**

### **Improved Fiber Resources and New Fiber Technologies**

**Session Moderators:** *Scott Rennekar*, Assistant Prof., Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA

### **Nano Fiber Technology Initiatives at Virginia Tech**

*Scott Rennekar*, Assistant Prof., Dept. of Wood Science & Forest Products, and *Audrey Zink-Sharp*, Prof., Assistant Dept. Head, Dept. of Wood Science & Forest Products, and Dir., Sustainable Engineered Materials Inst., Virginia Tech, Blacksburg, VA

## **News From Paul Winistorfer cont.**

- The week of June 18th I will be participating with VeneerTech as one of three judges in the Craftsman's Challenge ([www.veneertech.com](http://www.veneertech.com)).
- On June 21 I will be making a presentation at the Engineered Wood Technology Association employment seminar in Atlanta on recruiting for the forest products industry. The event is sponsored by APA – The Engineered Wood Association. Meeting details can be found at <http://www.apawood.org/>

## **New Wood Education Resource Center Grants Awarded**

Dr. Brian Bond, Peter Hamner and Dr. Marshall White have been awarded \$79,161 from the Wood Education and Resource Center, USDA to develop drying protocols for the prevention of mold on pallet and packaging materials. The work will also include comparisons of drying and chemical treatment for mold prevention and will be carried out by a graduate student. The work represents a cooperative project between the Drying Lab and the Unit Load Design Center. The title of the proposal was Development and Evaluation of Methods to Control Mold on Hardwood Pallets.

Dr. Bob Smith and Brian Perkins have been awarded \$64,000 from the Wood Education Resource Center, USDA to investigate changing strategies that impact the performance of eastern hardwood lumber manufacturers. The title of the proposal was "Benchmarking Factors that determine Marketing and Firm Performance of Eastern Hardwood Lumber Manufacturers to Improve their Competitiveness"

Dr. Earl Kline and Brian Brashaw from University of Minnesota Duluth have been awarded \$84,500 from the Wood Education Resource Center, USDA to create experiential learning activities in the area of "Total Productive Maintenance for the Wood Products Industry". This grant is to be shared between Virginia Tech and University of Minnesota Duluth to create training modules to assist the forest products industry understand productivity limitations and develop their own tools to overcome their limitations for improved business competitiveness.

## **Join Us For a Send Off**

Join us on Thursday June 14 at 10:00 am at the Brooks Center as we send off Dr. Jim Fuller and Dr. JongNam Lee. Drs. Fuller and Lee have been employed by SEMI over the past years, as well as working with faculty on sponsored research. Jim has taken a position with Timber Truss in Orange, Virginia. JongNam is moving West to join APA - The Engineered Wood Association in Portland, Oregon as a Research Scientist and Engineer. Thanks for your contributions with us and best of wishes for a successful start to your new careers!

## **Faculty Work Session Productive**

Faculty met on Thursday June 7th to continue work on the rebuild of our graduate education platform for the department. We completed discussion and deliberation on the new degree requirements for the M.S. and PhD degrees in the department. We will be moving over the coming weeks to prepare, submit and conclude necessary work required to bring this to completion. Our new degree platform will be more flexible for the committees and for the graduate experience in our department, as well as offering a higher quality of course content and choices. We will be rewriting our Graduate Policies and Procedures Guidelines over the summer for availability at the start of fall semester.

We addressed other business and issues as well including:

- Wood Enterprise Institute
- Wood 1234 in the Curriculum
- Wood 2554 in the Curriculum
- Wood Week 2007 – and the Virginia Forest Industry Technology Day
- Graduate Student Annual Evaluations
- Standing Committee Transitions Heading into fall - expected work and outcomes for the 2007-2008 academic year (and consideration of new committees needed?)
- Assessment heading into SACS accreditation reporting
- Visiting Scientist Program
- White Scholarship Establishment
- Space issues at Brooks and Cheatham Hall for faculty and graduate students
- Adjunct Faculty Roster, Status and Opportunities
- Space and Building Our Future
- Opportunity for new initiatives on campus for us to be engaged in
- Winistorfer Follow-up on 5-year Review
- Recruiting Updates
- Graduate Student Updates
- Inside VT Wood
- Communications among us and beyond us

## **VT Wood at International Nanotechnology Conference in Knoxville**

By Maren Roman

TAPPI, the leading association for the worldwide pulp, paper, packaging and converting industries, and The Forest Products Society are presenting The 2007 International Conference on Nanotechnology for the Forest Products Industry on June 13-15, 2007 at the Knoxville Convention Center in Knoxville, Tennessee. The Virginia Tech Department of Wood Science and Forest Products will be represented at this meeting by Prof. Maren Roman and

graduate students Shuping Dong, Zhiyuan Lin, Fernando Navarro, Karthik Pillai, and Zhou (Angela) Yu. Roman is chairing a session on “Naturally Occurring Carbohydrate, Cellulose, and Cell Wall Nanostructures”. Both, she and Pillai will be presenting their research in the area of “Self-Assembly and Biomimicry” (June 14, 10:45 a.m. – 12:15 p.m.). Navarro will present his work on “Inkjet Printing of Cellulose Nanocrystal Suspensions” (June 13, 4:30 p.m.) and Dong her work on “Cellulose Nanocrystals as Drug Carriers in Tumor Targeting” (Poster Session I, June 13, 5:45 p.m. – 7:30 p.m.). The conference program includes a tour of the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory.

## General Announcements

To: Deans, Department Heads, and University Center Directors

From: Ken Miller (millerk@vt.edu), University Controller and Tom Kaloupek (kals@vt.edu), Director of Materials Management (by way of Sherry Crunkilton, scrunkil@vt.edu)

As the result of the support and hard work of many individuals, the HokieMart business system has reached our goal of completing university-wide rollout during FY 07. To date, nearly 3,000 individuals have been trained to use the system. In the month of April, 6,375 transactions, valued at \$10.9 million, were processed through the HokieMart. We wish to express our thanks to everyone who has helped to make this important modernization project a success.

We need to finalize the implementation phase of the project. This means that all transactions must be processed electronically through the HokieMart and that paper forms (requisitions and DOPP forms) will not longer be accepted. It is expected that all departments will be fully converted to the system as of July 1. We realize that individuals in some units may not have been able to attend training. To support this, a full schedule of classroom training will be offered during June, July, and August. Help Desk and Help Line services will continue to be provided.

Further, the Controller’s Office will discontinue the past practice of maintaining signature cards. The need to have signature cards has been replaced by the HokieMart approval process.

We ask that you meet with business managers and key fiscal personnel to determine the exact state of HokieMart implementation within your unit. If the system has been less than fully implemented, action needs to be taken to have necessary personnel establish HokieMart accounts and attend training. They need to use the system immediately upon completion of training.

For questions or assistance please contact either Wendell Vest (vest@vt.edu, 231-8582) in the Controller’s Office or Bonnie Sutphin (sutphinb@vt.edu, phone 231-4637) in the Purchasing Department. Thank you.