The Department of Wood Science & Forest Products at Virginia Tech

Volume 1 Issue 11 — Monday, July 3, 2006

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INSIDE VT WOOD

Reminder...

Remember to submit department news items by Friday 3 pm 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

- We had great VT representation at our annual meetings last week in Newport Beach, CA. Details of participation and awards are described below – congratulations to all for your leadership and participation.
- We made many significant scholarship awards last week to our students – details are shown below.
- VT New Student Orientation begins the week of July 10th. The department will have a new brochure available to orientation students and will be represented via Judy Araman's presence at orientation.
- Inside VT Wood is long this week – read it all!

Creative Achievements – Annual Report – There is Still Time

Our number one priority is to get Creative Achievements to the printer. If you have not submitted items to the database, or finished up reporting on your writing assignment there is still time. **Absolute deadline is July 15th.**

SWST-FPS Meeting Follow Up

The Society of Wood Science and Technology and the Forest Products Society International Conventions were held last week in Newport Beach California. The department was well represented by the following attendees:

Bob Bush	Brian Bond	Chip Frazier
Tom Hammett	Dan Hindman	Geza Ifju
Scott Renneckar	Bob Smith	Audrey Zink-Sharp
Paul Winistorfer	Dan Cumbo	Peter Hamner
Sudipto Das	Omid Parkizkar	Victor Cossio
Gi Young Jeong	Brian Perkins	Zhiyuan Lin

Presentations Made by Faculty and Graduate Students at the 2006 International Conferences of the Forest Products Society and the Society Of Wood Science and Technology

The following is a list of presentations (oral and poster papers) given by faculty and graduate students at the meetings. Included in this listing are papers authored by faculty from the Sloan Forest Industries Center. Many faculty were also session organizers and session chairs at the meeting. Congratulations to all for an impressive VT showing.

Session Chair: Brian H. Bond
Session Moderator: Brian H. Bond
FPS/SWST Session IV: Moisture in Wood: Problem for Housing and Wood Construction

Delton Alderman and David Brinberg
An Assessment of Veneer Log Quality Attributes
Wood Anatomy and Quality

Brian Perkins, Robert L. Smith, and Charlie Becker
A Business Model for Small-Diameter Processing Facility in Southwest Virginia
SWST Student Poster Competition

Scott Renneckar
Tailoring Wood Surfaces by the Self-Assembly of Nanoparticles and Polyelectrolytes
Session 1: Coatings

Chip Frazier
A Review of Wood and Isocyanate Resin Cure Chemistry: Recent Results
Session 1: Coatings

Delton Alderman and David Brinberg
Personalized Technology Transfer
Session 3: Extension and Technology Transfer: Making the Connection

Session Chair: Robert L. Smith
Session Moderators: Robert L. Smith and Delton Alderman
Session 4: Forest Products Marketing

Delton Alderman, Carolyn Mu, Scott A. Bowe and Robert L. Smith
Entrepreneurship-Innovation in Eastern White Pine Production and Manufacturing
Session 4: Forest Products Marketing

Omid Parhzikar, Robert L. Smith, Chad R. Miller, and Bethany Stitch
Analysis of the Transportation Needs of the Wood Products industry in Appalachia
Session 4: Forest Products Marketing

Session Chair: Daniel P. Hindman
Session Moderator: Daniel P. Hindman
Session 7: General Topics in Wood Engineering

Daniel P. Hindman and S. Katie Harrison
Statistical Correlation of Test Methods for Shear Moduli Determination
Session 7: General Topics in Wood Engineering

Sudipto Das
2nd Place Wood Award
Probing the Interactions between Isocyanate Resins and Wood Polymers

Delton Alderman, Kent Nakamoto, David Brinberg
Personalized Technology Transfer
Education / Extension

Victor Cossio and Robert L. Smith
Introducing non-Traditional Species from Certified Forests in Bolivia into the U.S. Market
Management, Marketing & Economics

Brian Perkins, Robert L. Smith, and Charlie Becker
A Business Model for a Small-Diameter Processing Facility in Southwest Virginia
Management, Marketing & Economics

Peter Hamner and Marshall White
Feasibility of Manufacturing Pallet Parts from Short Recovered Hardwood Segments using Splicing Technology
Biomass and Small Log Processing

Gi Young Jeong and Daniel P. Hindman
Plate Bending and Twisting Tests of Southern Pine and Parallel Strand Lumber (PSL)
Wood Engineering / Mechanical Properties

Jong Nam Lee and Daniel P. Hindman
A Wood Strand as a Multi-Layered Composite: Effect of Intra-Ring Property Variation on its Mechanical Behavior
Wood Engineering / Mechanical Properties

Zhiyuan Lin and Daniel P. Hindman
Comparison of mechanical Properties between BSP and OSB
Wood Engineering / Mechanical Properties

Scott Renneckar, Audrey Zink-Sharp and Wolfgang G. Glasser
Self-Assembly of Biopolymers on Fiber Surfaces
Fiber Procurement-Nanotechnology for Improved Wood and Paper Products

D. Earl Kline, Dan Cumbo, Timothy S. Stiess and Brian H. Bond
Woods-to-Goods: Measuring the Quality Screen for the Forest to Consumer Supply Chain
Session 11: Advanced Process Improvement Systems for the Forest Products Industry

Adam M. Taylor, Maurice Defo, and Brian H. Bond
Predicting Safe Oak Drying Rates using near Infrared Spectroscopy
Session 11: Advanced Process Improvement Systems for the Forest Products Industry

Session Chair: Brian H. Bond
Session 13: Recent Developments in Primary Processing and Drying of North American Hardwoods

Brian Perkins, Robert L. Smith and Charlie Becker
A Business model for a Small-Diameter Processing facility in Southwest Virginia
Session 13: Recent Developments in Primary Processing and Drying of North American Hardwoods

Delton Alderman and David Brinberg
An Assessment of Veneer Log Quality Attributes
Session 13: Recent Developments in Primary Processing and Drying of North American Hardwoods

Session Chair: David Carradine and Daniel P. Hindman
Session 14: Shake-N-Bake: Seismic and Fire Resistance of Wood-Framed Buildings

Daniel P. Hindman
Safety Issues Associated with Lateral Buckling of I-joistsSession 14: Shake-N-Bake: Seismic and Fire Resistance of
Wood-Framed Buildings

Sudipto Das Wins Second Place Wood Award for Outstanding Research at International FPS Meeting

Sudipto Das was awarded the Second Place Wood Award at the FPS meeting in Newport Beach last week. The Wood Award recognizes outstanding graduate student research in forest products/wood science in North America. Sudipto was recognized for his doctoral research and the paper he submitted titled "Probing the Interactions between Isocyanate Resins and Wood Polymers". Dr. Das was presented with a check for $500 at the awards luncheon. Dr. Chip Frazier was Sudptio's major professor. The Wood Award is sponsored by Dynea.

This is the third year in a row that VT graduate students have placed either first or second in the Wood Award Competition. Since its inception, VT graduate students have garnered first or second place in the competition a total of 15 times.

2006 *Second place: Sudopto Das*, Virginia Tech
Probing the Interactions between Isocyanate Resins and Wood Polymers

2005 *Second place: Richard K. Johnson*, Virginia Tech
Thermoplastic Composites with Lyocell Fibers

2004 *First place: Nicole Robitaille Brown*, Virginia Tech
Understanding the Role of NMA Distribution in Crosslinking Poly(vinyl acetate) Latex Adhesives

2002 *Second place: Milan Sernek*, Virginia Tech
Comparative Analysis of Inactivated Wood Surfaces

2001 *Second place: Jun Zheng*, Virginia Tech
Fundamental Studies of Phenol-Formaldehyde/Polymeric Diphenylmethane Diisocyanate Hybrid Adhesives

1999 *First place: Alexander Salenikovich*, Virginia Tech
The Racking Performance of Light-Frame Shear Walls with Various Aspect Ratios

1998 *Second place: Christian Heine*, Virginia Tech
Cyclic Response of Full-Scale Shear Walls with Various Openings and Overturning Restraints

1997 *First place: Robert Schmidt*, Virginia Tech
13C CP/MAS NMR Characterization of the Wood Phenol-Formaldehyde Bondline

1996 *Second place: Ackah Toffey*, Virginia Tech
Chitin Films from Waterborne Chitosan as Potential Wood Coatings

1994 *First place: Greg C. Foliente*, Virginia Tech
Response Analysis of Wood Structures Under Natural Hazard Loadings

1990 *First place: Perry N. Peralta*, Virginia Tech
Irreversible Thermodynamics and Nonisothermal Transport of Moisture in Wood

1990 *Second place: Michael P. Wolcott*, Virginia Tech
Fundamental Aspects of Wood Deformation Pertaining to Manufacture of Wood-Based Composites

1988 *First place: Edward C. Stalling*, Virginia Tech
The Competitive Position of Wood as a Residential Siding Material: A Model of Consumer Perceptions

1987 *First place: Stephen S. Kelley and Timothy G. Rials*, Virginia Tech
Relaxation Behavior of the Amorphous Components of Wood

1986 *First place: Stephen J. Smulski*, Virginia Tech
Elastic Behavior of Glass Fiber Reinforced Hardboard

Tom Hammett Elected to FPS Board of Directors

Tom Hammett has been elected to the FPS Board of Directors for a 3 year term. Tom is representing the South East Section and the Carolina Chesapeake's Section. The Board meets three times each year, including pre and post meetings at the International Convention.

Chip Frazier is Awarded USDA NRI

Professor Chip Frazier was awarded a USDA NRI grant for his proposal titled Novel Rheological Tools for Xylem Structure/Property Determination. The proposal was funded at $400,000 and has collaborators from the University of Maine.

Scholarship Awards Total Over $35,000

Scholarships totaling $35,000 were awarded last week to undergraduate students in the department. Scholarships were awarded from the Center for Forest Products Marketing and Management, Center for Unit Load Design and the Department. New scholarships in the department include the NWPCA and Pallet One scholarships for students in the packaging science option. These awards follow our newly established application deadline of May 15th. We have made awards to rising sophomore students, and several incoming freshman students. Awards will be available to students upon return to campus in August. Our scholarship awards recognition reception will be held in conjunction with WOOD WEEK 2006 on Wednesday, October 4, 2006 at the Inn at Virginia Tech.

Scholarship Name	Award to	Amount awarded
G & ME Ragsdale	Jonathan Frey	2,500
G & ME Ragsdale	Jesse Paris	2,500
Bryan Graeser Memorial	Jesse Paris	2,500
Victor Clay Barringer	John Foster	2,000
Boehm-Madison Lumber	John Oliver	1,000
Snavely Forest Products	Jonathan Pace	2,000
Morgan Lumber	Jonathan Pace	1,000
Virginia Forest Products Association	Josh Hosen	1,000
EG Stern & J Stern Fromberg	Josh Hosen	2,000
Hardwood Publishing	Joshua Hartzog	1,000
NWPCA	Jennifer Dvorsky	5,000
G & ME Ragsdale	Jennifer Dvorsky	500
Jeld-wen Foundation	Benjamin Ralston	2,000
Danzer Group	Brian Thompson	2,000
PalletOne Annual	Ryan Anthony	1,500
Hardwood Manufacturing Association	Randy Freehan	1,000
Baillie Lumber	Stuart Clontz	500
Frank Miller Lumber	Daniel Roethle	2,500
G & ME Ragsdale	Daniel Roethle	2,500
Total		**35,000**

Albert, Caudill and Jones Vacation Schedules in July

Our technical staff is taking some time off in July. For your information Kenny, Rick and David will be out of their offices/labs on the following dates
Kenny – Out week of July 10-14
Rick – Out week of July 10-15
David – Out week of July 17-24

Brooks Fire Inspection July 5th

The fire safety inspection for the Brooks Center is scheduled to begin Wednesday July 5, 2006. I would appreciate your assistance with notifing persons working in the Brooks Center that I will be conducting the inspections.

The following are a few of the items that I will be looking for:
• permanent useage of extension cords
• daisy chaining of powerstrips
• candle -missing and/or soiled ceiling tiles
• monthly checks of fire extinguishers
• combustible items stored within 18" of the ceiling of sprinklered rooms or 24" of non-sprinklered rooms
• electrical panels being blocked by storage
• smoke or fire doors being propped
• any items stored in a electrical closet
• exit lights working
• emergency action plans
• emergency evacuation routes
• proper storage of chemicals and other flammable items
• improper accumulation of combustible items

These are just a list of the common violations on campus. Please let me know of any question or concerns

Jeremy Williams
Fire Inspector 1-4207

VT WOOD Available for Download

The VT Wood insignia is available for download for your use on slides, posters, etc. The high resolution, scalable image is available at: http://www.woodscience.vt.edu/downloads/logos/vtwood

Announcements

To: Deans, Department Heads, and University Center Directors
From: David W. Richardson (daverich@vt.edu), Assistant VP for OSP Administration (by way of Pam Pettry, pettry@vt.edu)
Re: Proposal Submissions

Please share this information with all investigators in your college or department:

As you are aware there has been an escalation of electronic proposal submission initiatives among both the federal and private sponsors in the last few years. Foremost among these is the federal initiative called Grants.gov. Grants.gov was conceptually developed to allow for a simple one-stop-shop proposal submission portal for multiple federal agencies. While this remains the ultimate goal, Grants.gov is not without its faults and has forced research institutions to rethink their internal submission policies. For example, for the latest June applications NIH proposals submitted via Grants.gov took an average of 1.7 application attempts per successful submission. While this is a significant improvement over the previous March submissions the system has some fundamental issues and has yet to experience a major deadline.

The biggest concern is that submitting institutions are not being notified of problems with specific proposals until a few days after submission. This is potentially catastrophic for proposals submitted the day before or the day of the deadline for if problems arise there is no time to correct and resubmit. For your protection and assurance we are strongly encouraging all investigators to submit early (as much as 4 business days in advance of the deadline) to allow for sufficient time in the event the proposal must be resubmitted.

Thank you for your consideration of this request and we look forward to assisting you with your proposal submissions.

To: Deans, Department Heads, and University Center Directors
From: Dwight Shelton, Vice President for Budget and Financial Management (by way of Terry Kingrea, tkingrea@vt.edu)
Subject: Implementation of the HokieMart

On May 22, 2006 the University successfully implemented the HokieMart-a web based electronic procurement system from SciQuest®. For several years, the University has maintained a goal of implementing and enhancing its information systems in order to improve the efficiency and effectiveness of our business and administrative processes. The HokieMart offers the capability to establish an electronic, paperless market place for external procurements and for business activities that are internal to the University. With this capability, the University will improve its efficiency and overall business practices. Further, we have the opportunity to create a common, paperless environment in which to process transactions, as compared to the current process where various service requests are paper intensive and manually processed through numerous systems.

Initial implementation of the HokieMart included a number of pilot departments from both academic and administrative areas. Following the initial implementation phase, we intend to rollout the system to the rest of the University in several stages during the remainder of 2006. To date, the University has trained 556 campus users from 18 departments. Since the beginning of June, approximately 140 users access the system on a daily basis. In total, University personnel have placed 714 orders valued at $358,000 through the system during June. A list of Frequently Asked Questions and Answers is available on the Purchasing Department website (http://www.purch.vt.edu/).

Both University project managers and the vendor believe that the University has made a strong start after four weeks of system use. On several occasions, we have received favorable comments and feedback from the implementation team and users, and we are pleased with the overall positive reaction to the system. As we roll out the system to departments throughout the University, we plan to continue to provide a high level of support for departmental personnel as they begin to utilize the new system. We have received a strong level of support from departmental leadership during the initial implementation phase, and your support and input will be critical to the success of this project when the implementation process begins in your area.

If you are interested in learning more about the SciQuest procurement system, you may wish to view the following website: http://www.sciquest.com/. The Purchasing Department is also posting briefing materials related to this project on their website: http://www.purch.vt.edu/.

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Addendum

Dr. Audrey Zink-Sharp Promoted to Professor July 1, 2006

Dr. Audrey Zink-Sharp has been promoted to the rank of professor, effective July 1, 2006. Audrey has a long list of accomplishments and contributions to our department, college and Virginia Tech. She was hired in 1992 as the first woman faculty member in the College of Natural Resources. She was the first tenured woman in the College and now becomes the first woman faculty member at rank of professor in the College of Natural Resources.

All of us in the department extend our congratulations to you Professor Zink-Sharp on this milestone accomplishment in your career!

Professor Zink-Sharp

Development Account Established for "Building Our Future"

A new development account has been established in the department for our "Building Our Future Campaign". The account is officially named "Building Our Future in Wood Science and Forest Products" An early gift helped to open the account, on schedule July 1.

Ommitted from FPS List of Presentations at Newport Beach, California - The Effect of Ellipticality on Processing of Red Oak Logs

Brian H. Bond, Assistant Prof., and Roncs Ese-Etame, Grad. Research Assistant, Dept. of Wood Science & Forest Products, Virginia Tech, Blacksburg, VA; and Janice K. Wiedenbeck, Project Leader, USDA Forest Service, Northeastern Research Station, Princeton, WV

It's All About People - Comments by Michigan Tech President Glen Mroz

"It's all about people!" You've probably heard it so many times in your life that it's become somewhat of a cliché. But the role of talented people is critical to the sustainable development of communities, and education is at center stage in both attracting talent and developing it into skills that serve us all.

Tom Friedman's recent book, "The World is Flat" describes a world where ideas move at the speed of light and capital moves to people with ideas. Internet capabilities have essentially leveled the economic playing field for many countries, particularly China and India, who have a talented and educated work force. This has lead to what is nothing short of an economic revolution in such far off places as Bangalore and Dalian. In a U.S. economy largely built on the innovation process that brings research ideas to the marketplace, there is increased anxiety in some circles over the outsourcing of innovation What has escaped many is the opportunity for insourcing innovation to rural communities that generate ideas and have or can attract talented people.

Rural communities such as ours provide easy access to a lifestyle that is increasingly valued by young professionals. Outdoor activities, safety, quality health care and the lack of a congested commute are just a few characteristics that draw people here or keep them here. However this is only attractive when coupled with a community priority that supports a strong K-12 education system. While much is made of the importance of training students for college and the workforce, there is a much more basic need that education fulfills. Simply put, highly motivated people want the best education for their children. Finlandia and Michigan Tech are dependent on this strong K-12 system; it is essential to attracting and retaining the best faculty and staff. These talented people in turn attract the best university students to our community, and these students are the future of innovation. I believe this simple relationship is at the core of our long-term sustainability and you can see it at work in our community.

The opportunities that talented people bring to the area make our universities vibrant and competitive regionally, nationally, and internationally. For example, these faculty and staff have originated unique approaches to education such as Michigan Tech's Enterprise Programs that fuse engineering and science curriculum with business and entrepreneurship. Over 600 undergraduates participate, adding momentum to a growing culture of innovation in our community. Students and graduates support the recent development of a dozen companies in Houghton and Hancock.

In addition, faculty and staff increasingly want the opportunity to be able to take their ideas and discoveries to the marketplace. Our community is growing in its ability to support them. The SmartZone and its incubators are a big part of demonstrating that capacity. Recognition of success also plays a role. This past year, ThermoAnalytics received the SmartZone Company of the Year Award and IR Telemetrics received the Governor's University Award for Commercialization Excellence. These important achievements show not only the competitiveness of these companies, but that a culture of innovation and a supportive community exist for talented people. When backed with university research programs that have grown to over $41 million at Michigan Tech alone, the portrait of our rural area as an emerging and sustainable entrepreneurial community begins to come into focus.

To continue to build on these early successes, we need to take advantage of the working relationships that are intrinsic to a small community. The relationships we enjoy (and sometimes take for granted) among our K-12 school systems, the SmartZone, the business community at large, Michigan Tech and Finlandia would be considered only a dream in many larger areas. Michigan Tech and Finlandia compliment each other's strengths and together create

a synergy that energizes the community. We are stronger working together and, as we look ahead, we can set the standard for cooperation, not only to support business development, but to ensure its sustainability by continuing the high quality education that exists and cultivating a pioneering attitude in our younger generation; values that are synonymous with entrepreneurship. Educating our youth about risk-taking, creativity, responsibility and adaptability is the responsibility of the education system and the community at large. Because in the end, the answer to the question of "what will keep business development sustainable" in our community is more accurately stated as "who will keep business development sustainable." The answer is — people.

Glenn D. Mroz
President Michigan Tech