

July 2009						
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1

# 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](#).

## News From Paul Winistorfer

- Today marks my final day as head of the department of Wood Science and Forest Products. Dr. Audrey Zink-Sharp assumes her role as Interim Head at close of business today. Thanks to you all for making Inside VT Wood our signature communication vehicle from the department! With this issue we have published 123 times in the past 3+ years.
- Congratulations to Dr. Kevin Edgar who has been elected a 2009 American Chemical Society Fellow. The 2009 ACS Fellows will be honored at a special ceremony during the ACS National Meeting in Washington, D.C. on Monday, August 17th. This is recognition of Kevin's long-standing contributions and accomplishments!
- We have been able to procure some much needed new equipment in the department in the last few months due to the sale of surplus property. Some of our new acquisitions are presented below.
- We had visits in the last week from two alum. Barry Zalph, Ph.D., P.E. stopped by the office to visit. Barry is in Louisville, KY as the Executive Director of the Bicycling for Louisville organization. Dr. Klaus Hofmann, Senior vice President Market Applications Europe for Dynea and colleague Dr. Harald Steindl were in town on collaborative research with Dr. Rennecker and doctoral student Rob Haupt.

## Department Visits Institute for Advanced Learning and Research, Danville Community College and Southern Virginia Higher Education Center

Department faculty visited the Institute for Advanced Learning and Research (IALR), Danville Community College and Southern Virginia Higher Education Center in South Boston in late May to learn of opportunities for collaborative programming. Department faculty presented a summary of their work as did colleagues from IALR, DCC and SVHEC. The two day trip was useful in exploring opportunities to engage on topics of mutual interest.



## Wood Week 2009 is set for September 14-18, 2009 – REGISTRATION NOW OPEN!

**Wood Week 2009 will take place September 14-18**, with the Career Fair on September 17th, the Student Scholarship Recognition Reception on Wednesday evening, September 16th. The industrial advisory boards of the Center for Unit Load and the Forest Products Marketing Center will also meet during Wood Week. There will be additional events such as a keynote speaker, amongst other activities that week. Stay tuned for more announcements as [Wood Week 2009](#) unfolds.

### Faculty Helps Merillat Kitchen Cabinet Team Win Masco Six Sigma Award

Masco Corporation located in Taylor, MI is one of the world's largest manufacturers of products for the home construction and improvement markets with annual sales in excess of nine billion dollars in 2008. Masco Corporation is the home of many well-known brands, such as Millgard Windows&Doors, Duraflex Ltd., Perless Faucet, Kraftmaid Cabinetry, and Merillat kitchen cabinets. Merillat, the largest kitchen cabinet producer in the U.S. has manufacturing and assembly plants all over the continental U.S.



Picture 1: Masco's 2008 Six Sigma Excellence Award



Picture 2: Double End Tenoner (DET) Kaizen team at Merillat's Atkins, VA cabinet door plant (front row left to right: Shannon Walls, Danny McPeak, Michelle Wilson, Mike Wymer; back row: Jon Shupe, Urs Buehlmann, Charlie Burkett; not in the picture: Danny Owens, Barry Thomas).

Every year Masco Corporation, as part of its commitment to continuous improvement, presents one plant with the Six Sigma Excellent Award (picture 1) for the best continuous improvement project conducted within the group. For 2008, the award was given to the Double End Tenoner (DET) Kaizen team in Merillat's Atkins, VA plant (picture 2).

As part of his extension activities, VT's Department of Wood Science and Forest Products Urs Buehlmann participated in the event as part of the DET Kaizen team. The team's objective was to reduce changeover time by 50 percent at the Drawer Front Double End Tenoner, where drawer fronts are cut to size and shaped on the edges. This type of problem requires a SMED (Single Minute Exchange of Die) Kaizen event to take place. A SMED is one of numerous

lean production methods helping organizations reduce waste in an organization. In essence, SMED provides the necessary systematic approach to analyze the existing process, to set achievable goals, to identify improvements, and to implement and sustain them.

The team reduced the changeover time at the Drawer Front DET line from 132 seconds per changeover prior to the event to 61 seconds after the event (a 54 percent improvement), realizing annual savings of \$26,500 for the company. The award winning idea was how the team handled an issue at the outfeed of the DET. Past machine set-up required all pieces to have completely left the machine prior to making a change in set-up. The end of the machine consisted of a 2 feet long conveyor, which all the parts of a given batch had to have passed prior to a change-over being able to be initiated, a process that took approximately 30 seconds. This situation is described in Table 1 under "Current Situation" and shown in Picture 3. Table 1 in fact is copied from the final report submitted to Masco.

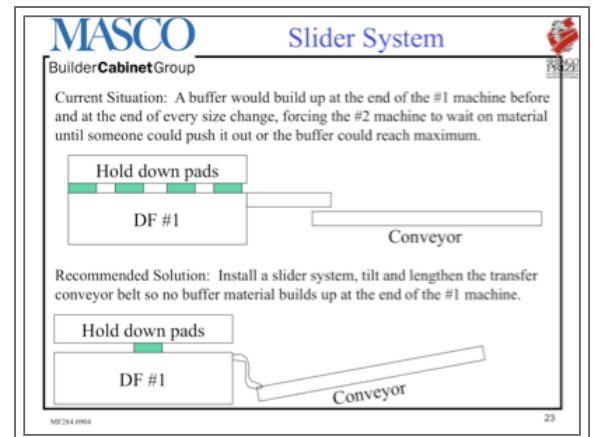
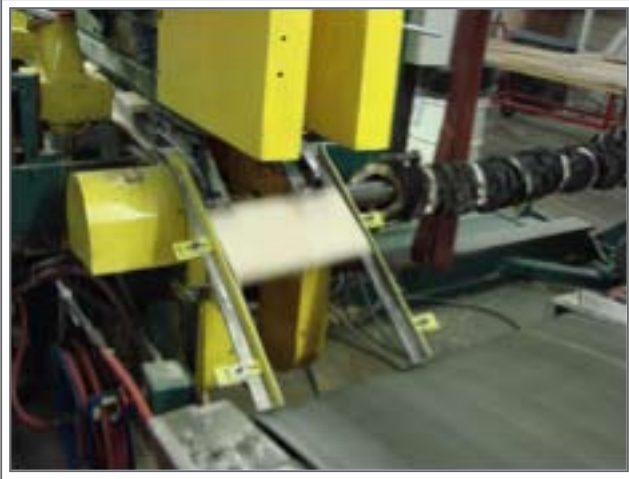


Table 1: Current situation and recommended solution as displayed in the Kaizen event report to Masco.

The solution found by the team was to remove the force-fed conveyor and replace it with a slide that relies entirely on gravity to work as shown in Picture 4. Such a solution is simple, requires almost no investment, saves energy, cannot fail, and does not require maintenance, yet it helps reduce change-over time. In fact, roughly half of the change-over time reduction achieved in this Kaizen event stem from this simple measure and was found worthy of a Masco Six Sigma Excellence Award.



Picture 3: Picture of Drawer Front DET outfeed section prior to Kaizen SMED event.



Picture 4: Gravity slide at Drawer Front DET for reduction of change-over time.

## Wood Engineering Laboratory Update

The Wood Engineering Laboratory saw two important equipment acquisitions over the summer. The addition of a 30-cubic foot conditioning chamber will allow research specimens to be conditioned with greater accuracy and precision. The chamber, made by Parameter Generation & Control, Inc. (PGC) can operate at temperatures between 50 and 850 C., and at relative humidity levels ranging from 10 to 95%. Its programmable digital control feature allows data to be collected and transferred directly to a database using an RS-232 interface. The chamber is located inside the Wood Engineering Lab.

The Department's 50,000 lb. capacity MTS Systems Corporation universal test machine received an important upgrade when its older analog control system was replaced in July with a digital MTS FlexTest 40 Control System. The new system has the capability of a larger dynamic testing range, and a full 8 integrated inputs for LVDT measurements.



## HCHS WoodLINKS Students Heading to National Competition in Las Vegas

By Southern Virginia Higher Education Center

Two students in Halifax County High School's WoodLINKS, USA dual enrollment program are headed to Las Vegas to compete in the Association of Woodworking and Furnishings Suppliers (AWFS) Fresh Wood Student Competition. Recent high school graduates John Barry and McKenzie Stevens will be representing the WoodLINKS program as they compete against high school students from across the United States.

The HCPS WoodLINKS site is the first in Virginia, and the 2008-2009 school year was its pilot year. Right out of the gate, the program's students developed and built an original chair that has been juried into the national AWFS Fresh Wood Student Competition. "The competition only selects a handful of applicants in the whole nation to compete. Applicants have to be juried in, and we were chosen out of 165 entries for class projects," said Clint Johnson, WoodLINKS Instructor.



WoodLINKS students McKenzie Stevens and John Barry, and WoodLINKS instructor Clint Johnson.

"When I got the phone call telling me we were going to Las Vegas it was like winning a million dollar lottery," said student John Barry. "It's the most amazing feeling I've ever had." But more than being an exciting trip, the competition and the WoodLINKS class has been life changing for Barry and classmate McKenzie Stevens. "Before this class I had a completely different career planned. I was going to work with wildlife conservation and go to college in Alaska. I had a plan, but these guys changed it up a whole lot for me—and I'm glad they did," said Barry. Classmate Stevens was at the opposite end of that spectrum, "I never had a plan," he said. "This class is the only thing I really worked towards and got into." What started as a simple class has developed into a passion for him. "I really enjoy working on wood and making custom furniture. I want to go as far as this will take me," he said.

WoodLINKS/Product Design & Development Instructor Kevin Chrystie had nothing but praise for the students, "Having the opportunity to teach students that have such a keen desire to learn this craft, and the discipline that accompanies



"It's an honor to be chosen in only our pilot year," Johnson continued. "We owe a huge thanks to Halifax County Schools and School Board members for allowing the WoodLINKS program into the curriculum. I also have to thank Mr. Warren Penick for co-teaching, Mr. Albert Randolph for his support and for allowing us to use the school's woodworking lab, and Dr. Mel Stanley for her tremendous hard work and continued support of the program," he said.

The student's contest entry, affectionately called "The Chair," is a beautiful work of art with a cherry-like finish. When asked to describe it, the words modern, contemporary, and futuristic are often used. Johnson describes the chair as a play on the Queen Anne Side Chair. "When you look at drawings of the evolution of the Queen Anne Side Chair you see the backrest becoming a separate entity and the legs becoming more curved through the years. Our chair fits in with the established style but with our own twist," he said. That twist is what earned the student's a place in the Fresh Wood Competition and will bring national and international attention to the Halifax County program.

it, is really quite rewarding. There is also a great responsibility that accompanies having such a positive influence on someone else's life; it keeps us humble and on our toes."

The AWFS Fresh Wood Student Competition is the largest of its kind, and highlights outstanding construction and design achievements by students. Students must complete a rigorous application process and be selected by a jury to learn a place at the annual competition. "We owe a lot of thanks to Blakely Swanson for helping us with our submission materials," said Johnson. Swanson, local photographer and owner of Images by Swanson, generously donated his time and expert services to help the students make the application deadline. "He allowed us to come into his studio with very short notice. He took beautiful pictures, and then generously gave us all of the prints we needed," said Johnson. "He never hesitated when we asked, and when we tried to pay him he wouldn't hear of it. We're so appreciative of what Mr. Swanson has done for us. It shows the strong community interest and involvement we have," he said.

For Swanson, this was an opportunity to support the program he believes in. "When I first saw the chair it hadn't been assembled—it was just in pieces—but I could tell it took a lot of talent and dedication," said Swanson. "It makes me feel good to see kids applying themselves and making something worthwhile. I'm proud of what they're doing and I'm happy to be supportive."

John Barry and McKenzie Stevens will travel to Las Vegas July 15-18 with their WoodLINKS instructors, Clint Johnson and Kevin Chrystie. "We're all thrilled," said Barry. "I'm amazed at the recognition we've received already." Barry and Stevens graduated from Halifax County High School in May, and will continue their training by enrolling in the Product Design and Development curriculum at the SVHEC this fall. The WoodLINKS high school dual enrollment program focuses on Product Design and Development, and is the first step in an eventual Associate's degree in Product Design and Development to be offered at the Southern Virginia Higher Education Center. Acceptance to the AWFS Fresh Wood Competition is an early sign of the strong program that has been developed.

For more information about the WoodLINKS dual enrollment program or the SVHEC Product Design & Development program call 434-572-5440, toll free 1-800-283-0098 or email [info@svhed.org](mailto:info@svhed.org).

