ENGINEEREDWOOD AUTUMN 2018 JOURNALL













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Info Fair Celebrates 25th Show

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THE WOOD-BASED COMPOSITES CENTER

In it for the Long Haul PAGE 20

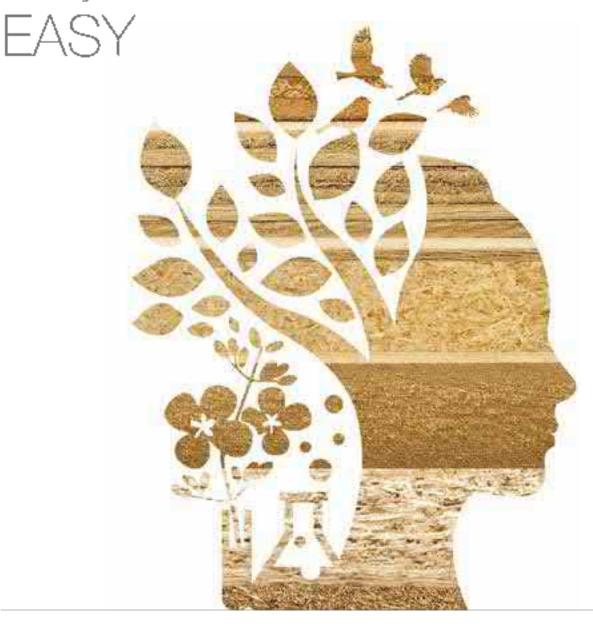


APA ANNUAL MEETING AND INFO FAIR PREVIEW

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PAGE 38

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About the Cover Photos:

EWTA's popular Info Fair supplier exhibition celebrates its 25th event this fall. See story on page 12



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Celebrating Milestones

Much can change in 25 years. How many times have you tried to find an old friend from college? Chances are, they've moved, changed their name, *and* changed jobs (probably a few times!) Have you ever passed through a town and looked for a restaurant you enjoyed the last time you visited? More than likely, it's been closed for years.

If you're an EWTA or APA member, you can rest assured that, after more than a quarter-century, Info Fair is still going strong. In fact, the annual supplier exhibition, which is celebrating its 25th event in conjunction with APA's Annual Meeting in San Antonio, Texas, this fall, is bigger and better than ever.

This issue of the *Journal* is dedicated to celebrating milestones. In these pages, you'll read not only about Info Fair's long and successful run (page 12), but also about the careers of two of its founding coordinators. EWTA's Melinda Lilley, who has served as the face of Info Fair since it kicked off in Tucson, Ariz., in 1993, is retiring this year (page 16), as is APA's Market Communications Director Marilyn Thompson (page 68), who was an integral part of the formation of the event.

We're also paying homage to the Wood-Based Composites Center, an industry research consortium that is celebrating 20 years in a few short months. It's managing director, Linda Caudill, takes us back to the beginning in her overview of the integral center (page 20), which also highlights the reasons why the wood products industry should be proud of this helpful resource. The story also checks in with a number of former and current WBC students to find out what benefits they received from the center.

Editorial Contributions

Along with Caudill's piece on the WBC, you'll also find a number of articles from contributors. Repeat contributor Joe Elling, APA's director of market research, brings us another interesting story (page 60), this time on the state of the transportation industry and how it's affecting the wood products industry. Also back with another feature is Timothy Young, a professor at the University of Tennessee's Center for Renewable Carbon. He discusses the importance of data science curriculum in universities' wood science programs (page 64).

EWTA Info Fair and APA Annual Meeting

This year's Annual Meeting and Info Fair supplier exhibition will be held Oct. 27-30 at the La Cantera Resort and Spa in San Antonio, Texas. All of us at EWTA (there will be two more of us this year – come meet Emily and Sydney!) are excited to celebrate this year's milestone with all of you. While the size and location of the event has changed since 1993, it's still a great place to network, share ideas and catch up with old friends and colleagues.

See you at the show!

scain@engineeredwood.org

APA Elects Cribb To Board of Trustees

The APA Board of Trustees has approved the nomination of Ashlee Cribb, Vice President of Structural Products for Roseburg Forest Products.

Cribb, who was recently promoted to her current position with Roseburg, is responsible for the sales and manufacturing of Roseburg's engineered wood products, softwood plywood and lumber businesses.

Cribb joined Roseburg in January 2017 as sales director for the company's solid wood business. She previously held several roles at Georgia-Pacific, most recently as vice president of industrial packaging with profit and loss responsibility for the commercial organization, as well as 11 manufacturing sites. Cribb has also worked at Monsanto Chemical and Imerys Performance Materials where she was responsible for marketing and product innovation.



IN MEMORIAM

Rodney Bell

Rodney J. Bell, 67, passed away peacefully at home on Dec. 31, 2017, after a long battle with cancer. A native Oregonian, he spent most of his life in Portland. Mr. Bell was a 20-year employee of EWTA member company SparTek Industries of Portland and had also served on the EWTA Advisory Committee. A plywood industry veteran, he was known as a helpful and supportive colleague who paved the path of learning for many who worked in the industry. Mr. Bell will be remembered for his encouragement, honesty and his sense of humor. He leaves behind his wife, Shawn, and son, Nolan.

James Emery Cole

James Emery Cole died June 24 at a Dothan, Ala., hospital. He was 87. Mr. Cole served in the U.S. Army during the Korean War. He worked for APA for 29 years before retiring in 1992. He is survived by his wife of 66 years, Beverly Cole; his daughter, Connie; his son, Greg; and several grandchildren and great-grandchildren.

Ted Freres

Ted Freres, 68, died June 3 in a Salem, Ore., hospital following a long battle with cancer. Mr. Freres was the youngest of four sons born to T.G. Freres, founder of the Freres Lumber Company. Mr. Freres joined the company following his 1973 graduation from Oregon State University. Freres Lumber exited the sawmill business in favor of plywood manufacturing in

1959. Today, the company produces veneer, plywood, laminated veneer lumber and mass plywood panels. Mr. Freres is survived by his wife, Diane, and three sons, Cameron, Kyle and Tyler.

Dr. W. Ernest Hsu

Dr. W. Ernest Hsu, 75, died December 25, 2017, in Portland, Ore. He had 34 years of experience in the OSB industry, with 16 years in research and development and 18 years consulting for four major OSB companies. He specialized in OSB process and product improvements, production cost reduction, process equipment improvements, development of various dual resin systems, development of strand orientors, and development of composite lumber from short and long strands. Dr. Hsu was a fellow of the International Academy of Wood Science and held more than 12 original process and product patents related to wood composites in the U.S., Canada and the European Union.

Thomas Maness

Thomas Maness, dean of the College of Forestry at Oregon State University since 2012, died July 12 in Corvallis following an undisclosed illness. He was 63. Under Maness' leadership, OSU was ranked the second-best college of forestry in the world in 2017 by the Center for World University Rankings. Mr. Maness arrived at OSU in 2009, serving as head of the Department of Forest Engineering, Resources and Management before becoming dean of the College of Forestry. Before joining OSU, Mr.

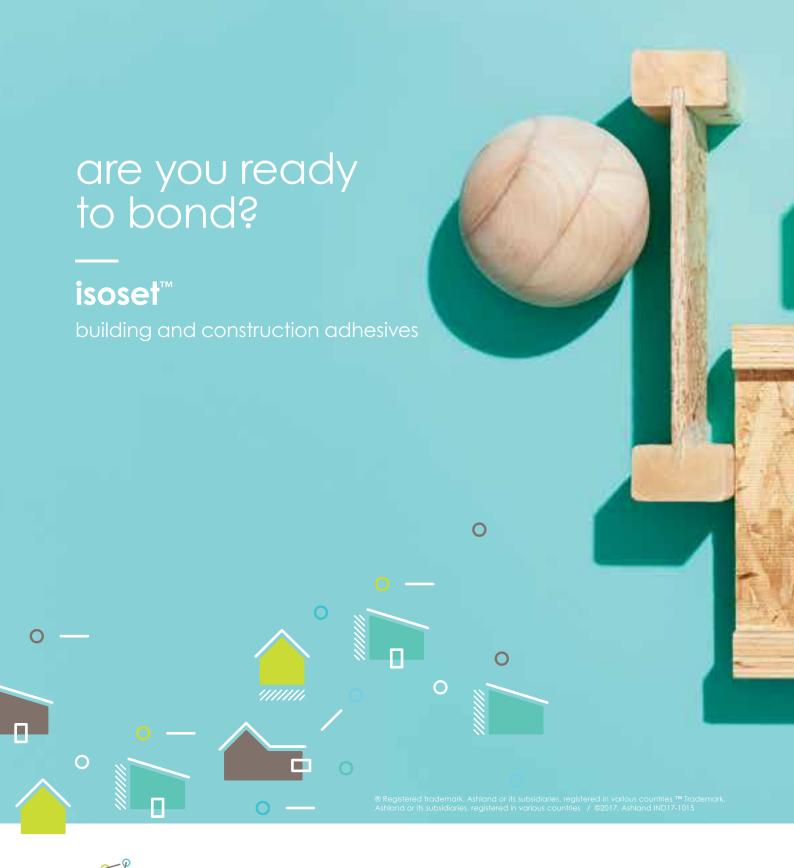
Maness worked in private industry as a research engineer. In 1994 he founded the Canadian National Centre of Excellence in Advancing Wood Processing at the University of British Columbia in Vancouver. Maness spoke at the APA Annual Meeting in Coeur d'Alene, Idaho, in 2015. He was a member of a panel of university deans discussing how the forest products industry has struggled with finding ways to attract young people to the profession.

Sherman Allan Nelson

Sherman Allan Nelson, 83, died June 23, in Warm Lake, Idaho, after battling Parkinson's disease for many years. Nelson worked at Trus Joist for 30 years, eventually becoming vice president of engineering. Mr. Nelson participated with the team that designed and built the Kibbie Stadium Cover at the University of Idaho, which received the Outstanding Civil Engineering Award in 1976. Mr. Nelson joined Trus Joist following his graduation from the University of Iowa and two years with the Army Corps of Engineers.

Darrell Schroeder

Darrell Schroeder, 95, former president and CEO of Stimson Lumber in Portland, Ore., died June 1. He started working for Stimson as a forest engineer converting railroads to logging roads adjacent to the Tillamook Burn. He was very active in many industry associations throughout his lengthy and successful career.





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CAUSE FOR CELEBRATION

Info Fair Celebrates 25th Show

by Sheila Cain

ore than a quarter century ago – in 1993 – the Pentium Processor was invented, Jurassic Park was a hit at the movie theaters and the Toronto Blue Jays were World Series champions. The year was also memorable for another reason: the debut of EWTA's first annual Info Fair.

The supplier exhibition would start out small – the first event in Tucson,

Ariz., drew just 19 exhibitors – but it would quickly grow. By the following year, 34 members had booths at Info Fair, and that number had grown to 40 by 1995. Aside from a dip in participation during the Great Recession, Info Fair has grown in both exhibitors and attendance nearly every year. This year, the 2018 Info Fair in San Antonio will host 92 participating member companies.

Always held in conjunction with the APA and EWTA joint annual meeting, Info Fair has long served as a venue where engineered wood industry suppliers can showcase their products and services and build relationships. Because the Annual Meeting draws a large crowd of APA members, EWTA members have plenty of opportunities to network. The exhibition is in an open ballroom where



The EWTA-sponsored Welcome Reception, like this one in Huntington Beach, Calif., last October, are popular, well-attended kick-off events for Info Fair and the APA Annual Meeting. The Saturday evening soiree gives members of both associations a chance to reconnect and have fun.





Early Info Fair coordinator Marilyn Thompson (right) and current EWTA member services director Melinda Lilley are both retiring this year. The team kicked off EWTA's first Info Fair (left photo) in 1993 and remain friends today (right photo). See related stories on pages 16 and 68.

food and beverages are served during two evening receptions (and one lunchtime event) during the Annual Meeting's run. Meetings, workshops, an awards dinner and a number of competitive sporting events provide even more chances for members to mingle.

Early Days

Info Fair was the brainchild of former APA President Dave Rogoway. The purpose of the exhibition was to broaden APA's program and better involve the suppliers who were part of the Plywood Research Foundation (PRF), the earlier

iteration of EWTA. PRF members had not previously been directly involved in APA's Annual Meeting.

"The two organizations had always been connected, but this was a way to engage the supplier members and to provide a platform for more interac-



tion with APA member manufacturers," says Marilyn Thompson, APA's recently retired market communications director and corporate secretary, who was an integral part in the formation of Info Fair.

Also involved from the beginning was Melinda Lilley, who also retires this year as EWTA's member services director (see side story on page 16)

The exhibition remained under APA's oversight until 1997, when it became a function of EWTA.

'It's about building relationships'

Early memories of the first Info Fair paint a picture of a fledgling event that would eventually become a much-anticipated annual gathering for hundreds of EWTA and APA members.

Lilley remembers meeting with Thompson and then-Market Communications Director Dennis Hardman just three months before the first Info Fair. Only 13 supplier companies had signed up to exhibit, and the planning team was

Info Fair's Pioneering Exhibitors

The first Info Fair drew 19 companies, many of which remain annual exhibitors:

- Adhesive Packaging Systems
- AWT/Reeco
- Chicago Board of Trade
- The Coe Manufacturing Company (today, USNR)
- Decision Dynamics Inc.
- Durand-Raute (today, Raute)
- Dyno Overlays Inc. (today, Arclin—Performance Applied)
- Elliott Bay Industries Inc.
- EML Enterprises
- Energy Products Inc.
- Georgia-Pacific Resins Inc. (today, Georgia-Pacific Chemicals LLC)
- GreCon Inc.
- H.B. Fuller Company
- Hyster Company
- International Knife and Saw Inc.
- Lancaster Knives Inc.
- Magnum Machinery Services
- Spare Parts Manufacturers Inc. (today, SparTek Industries)
- The Willamette Valley Company







Plywood Research Foundation (now EWTA) members embraced the idea of Info Fair back at its inaugural show in Tucson, Ariz.



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wondering if moving forward would be worth the time and effort, or if the inaugural show should be postponed a year.

"My response was, there's always going to be a 'first year," says Lilley. "I said, 'Let's go for it!"

By show time, six more exhibitors had signed on. Nineteen exhibitors were

spread out in an enormous ballroom, but "It worked!" says Lilley.

At the first Info Fair, the trade show floor was open all day, which Lilley and Thompson quickly realized was not the best format for meaningful connections. They noticed that people tended to gather at exhibitor booths during receptions and mealtimes since they are typically in workshops and meetings most of the day. An open-all-day show floor didn't make the most of anyone's time.

"To a newcomer, it appears that the show's hours are limited," says Thompson, "but that's intentional. Coupling the show with lunchbreaks and receptions

Farewell to Info Fair's Melinda Lilley



Melinda Lilley, who has served as the face of EWTA's Info Fair since its inception, is retiring this fall.

The 2018 Info Fair will be the last for Lilley, who has overseen the supplier exhibition in varying capacity since its inception in 1993. She has been its lead coordinator for the past 21 years Lilley has also served as EWTA's member services director and the *Engineered Wood Journal's* advertising salesperson.

Lilley was Weyerhaeuser's trade show manager from 1985 to 1990, and was approached by APA's Marilyn Thompson in 1992 when APA decided to add Info Fair to its Annual Meeting. Lilley and Thompson worked together to plan and execute Info Fair for several years before Lilley took over management of the event.

Lilley helped grow the event from just 19 exhibitors in its first year to nearly five times that many today. She has overseen the set-up and tear down of hundreds of trade show booths, helped track down lost shipments, accommodated special member requests and coordinated the popular tennis tournament for APA and EWTA members each year.

Alan Knokey, vice president of USNR, one of Info Fair's longtime exhibitors, calls Lilley a "memory maker."

"At one of the first Info Fairs, Melinda came to the conclusion that my dad and I were doing something wrong setting up the booth," says Knokey, whose late father, Gene, also worked at USNR (previously Coe Manufacturing.) "At about eight months pregnant, she climbed to the top of a step ladder and finished our booth set-up as we held the ladder for her. Twenty-some years later, I had the pleasure of meeting the baby (Melinda's son, Christopher, now age 24)."

EWTA Managing Director Terry Kerwood has been a friend and colleague of Lilley's for more than 20 years. He says the value she brought to the association goes beyond the numbers she produced and growth in the areas she managed.

"Melinda made everything she touched just a little bit better," says Kerwood. "The relationships she developed and nurtured over the years fed the association and kept our exhibitors and members coming back again and again, even in the most challenging economic times. We most certainly will move forward and her legacy will live on, but it will never be the same without her. She will be missed by us all."

Joining EWTA to replace Lilley is Emily Houg, who will serve as the new Info Fair manager. Houg has coordinated special events and conferences across the U.S. for government agencies, associations and nonprofits and has held board positions with the Pacific Northwest Chapter of Professional Meeting Convention Association.

Also new to EWTA's staff is Sydney Martin, the association's new member services coordinator. In this role, Martin will be managing membership directory updates, working with *Engineered Wood Journal* advertisers, and providing general support to EWTA members, the managing director and Info Fair manager.



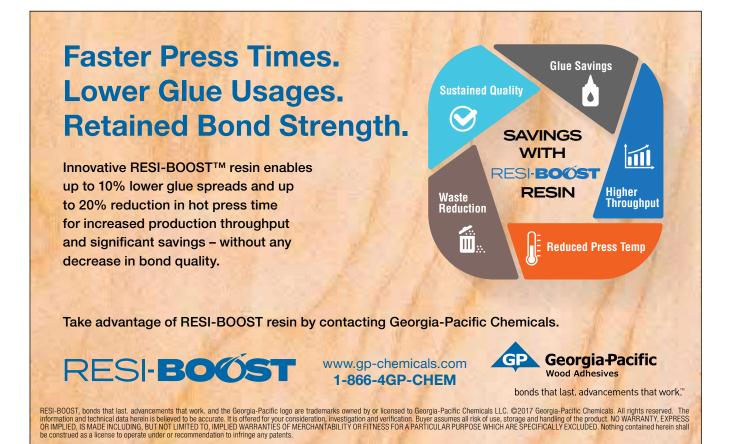
Sydney Martin



Emily Houg



EWTA members gather every year for an annual photo, like this one in Huntington Beach, Calif., in 2017.





Coordinating Info Fair hours with mealtimes and receptions helps create an upbeat atmosphere and supports networking.

creates an upbeat atmosphere for Info Fair and really supports the networking that EWTA promotes."

Lilley agrees.

"Info Fair is not about making the sale on the show floor," she says. "It's about building relationships and making that contact, and rubbing elbows with people who make business decisions."

Growth Through the Years

Info Fair has evolved as it has grown. Thanks to the addition of sponsorship opportunities, an EWTA member-funded Saturday night Welcome Reception was added in 1998, providing newly arrived meeting attendees a chance to wind down and reconnect with friends and colleagues in an informal setting. Enter-

tainment at this opening event has varied throughout the years, from a pianist and a caricature artist to armadillo races and a mock Western gunfight.

Leveled exhibitor sponsorships – platinum, gold and silver – were added in 2012, allowing members even more opportunities to support EWTA.

"I'm always amazed at the support we get from our members," says Terry Kerwood, EWTA's managing director. "Whenever the opportunity is presented, their response is just overwhelming. The revenue we have received in support of this event has been leveraged to support tens of thousands of dollars in industry research."

As Info Fair celebrates its 25th show, the event continues to be a popular gathering that both EWTA and APA members look forward to every fall.

"I've always said, this is not a big equipment show," says Thompson. "There are other places people can go for that kind of experience. That's why we call it Info Fair – it's about gathering information and making connections. It's a format that has served us well."

Sheila Cain (scain@engineeredwood. org) is communications director of the Engineered Wood Technology Association and editor of its Engineered Wood Journal.

The Missing Info Fair

While Info Fair is celebrating its 25th event this year, it has actually been 26 years since the first show was launched back in 1993.

Why don't the numbers add up?

The 2001 Info Fair, along with APA's Annual Meeting, was scheduled for Sept. 15-18 in San Diego, Calif., just four days after the 9/11 terrorist attacks stunned the nation and curtailed air travel. APA and EWTA staff cancelled the meetings and rescheduled them for Nov. 4-7, also in San Diego, but low attendance commitments and continued travel uncertainty led to the eventual cancellation of that event as well.

"It is a disappointment to the staff, the Board and the member supplier community representatives who had indicated they

planned to attend," read a notice sent to APA and EWTA members in mid-October of 2001, "however, we felt in the end that a poorly attended meeting would not be in the best interests of the membership or the industry."

The Annual Meeting and Info Fair resumed in September 2002 in Orlando, Fla.



The 2001 Annual Meeting and Info Fair was cancelled due to travel restrictions following the 9/11 terrorist attacks.



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THE WOOD-BASED **COMPOSITES CENTER**

In it for the Long Haul

by Linda C. Caudill

▶ he Wood-Based Composites Center is an industry/university research consortium with a mission to advance the science and technology of wood-based composite materials. Since its founding in 1999, industry service has been the motivation, inspired by the center's industry members that provide guidance and oversight on all matters including research, student training and fiscal decisions. Besides strong industry support, the durability of the WBC is due to a stable leadership triad

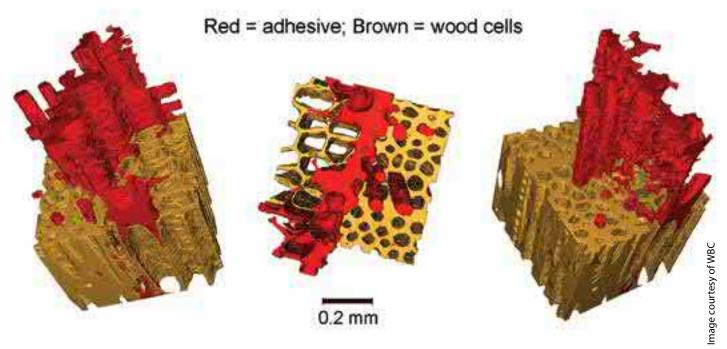
composed of center directors Linda Caudill, Fred Kamke and Chip Frazier. As the Center's 20th anniversary approaches, this is the story of a member-driven, multi-university research center, with long-lasting partnerships and a reputation as a leader in research and education in wood composites.

In the Beginning

In 1998, Professor Fred Kamke convened a group of industry leaders to envision an industry/university partnership starting at Virginia Tech. Kamke established the Wood-Based Composites Center on January 1, 1999, with funding from nine founding members. Kamke recruited Professor Chip Frazier to complement his research and 13-year industry veteran Linda Caudill to provide industrial perspective in her role as managing director. Kamke knew that a successful center must include multiple universities, reflecting regional interests for the North American industry. As a result, the WBC started as an industry/univer-



Co-director Fred Kamke uses special microscope images to teach Wood Adhesion Short Course participants about adhesive penetration and distribution in different wood species.



WBC research often focuses on the wood-adhesive interphase, as seen in these 3D tomography reconstructions of phenol-formaldehyde adhesive in a bondline of parallel-laminated Doulas-fir.

sity consortium including Oregon State University, Mississippi State University and the University of Minnesota. Center members created a research agenda and membership fees were used to support graduate research and undergraduate scholarships.

Early on, the center members provided guidance, but not the direct control that they enjoy today. Nobody knew if the WBC would last, and Kamke directed the center through turbulent downturns, hustling to maintain industry support. Despite the challenges, a foundation was laid that enabled the WBC to survive the economic storm that was on the horizon.

In 2005, opportunity knocked, and Kamke stepped down as WBC director at VT and accepted the JELD-WEN Endowed Chair faculty position at OSU. The center members appointed VT's Chip Frazier as director, and operations continued with the Caudill/Kamke/Frazier triad intact. Under Frazier's leadership and the industry's guidance, the center reformulated its research offerings and emerged with a new academic partnership including VT, OSU, University of British Columbia and University of Maine.



Virginia Tech student Niloofar Shivyari is working on a way to reveal the source of formaldehyde emissions as either biogenic (from wood) or synthetic (from adhesive).

Image courtesy of WBC

Change on the Horizon

Then came the perfect storm, the Great Recession of 2008. WBC membership plummeted from 17 to six in just one year, and hope was in short supply. The center had to be reinvented; something new with greater industry value had to be created. Enter the U.S. National Science Foundation. Frazier, Kamke and Caudill convinced the remaining members to compete for an NSF Industry/University Cooperative Research Center grant in hopes that the federal funding and recognition would help the center survive the recession and thrive in the future.

The I/UCRC model imposed the critical missing ingredient: greater industry control. The center members had to assume ownership, creating an extension of the members' own research efforts. Likewise, the faculty had to become more responsive and more accountable to the industry.

In 2010, the NSF awarded an I/UCRC grant to VT and OSU; UBC and UM remained as subcontracted partners. The WBC steadily toiled under the new model, and as the industry value grew,

the membership rebounded. The successes cultivated by the members earned an NSF renewal for phase-two operation in 2016

Currently, the WBC enjoys record funding, most of which is supplied by the industry. The NSF three-phase model progresses with less and less federal support, and ultimately the WBC must operate exclusively from industry funds by 2026. The academic partnership was redefined in 2016 to include VT and OSU as equal partners, and competitive

FACES OF WBC: SUDIP CHOWDHURY



WBC STATUS: Former student

JOB TITLE: Research and Development
Group Leader (Fillers/Extenders)

COMPANY: Willamette Valley Company

DEGREE: PhD, Macromolecular Science
and Engineering, 2011

UNIVERSITY: Virginia Tech

JOB DESCRIPTION: "(I) lead and manage
projects to support the entire fillers
and extender product line, primarily

JOB DESCRIPTION: "(I) lead and manage projects to support the entire fillers and extender product line, primarily intended for the wood composite industry. In addition, my group also develops products for the erosion control industry, where we make binders/adhesive for water and wind erosion control products. As a chemist and group leader I am heavily involved in developing novel fillers/extenders for adhesives for wood composites."

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subcontracts are awarded to any North American university faculty willing to embrace industry service. Currently, the WBC subcontracts research at UBC, North Carolina State University, Michigan State University and Auburn University. Graduate research remains the emphasis, and undergraduate scholarships were replaced with undergraduate research. Today the WBC is an international operation with 16 members from around the globe.

Wood-Based Composite Center Members

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- Ashland
- Boise Cascade Company
- Columbia Forest Products
- Fraunhofer WKI Institute for Wood Research
- Georgia-Pacific Chemicals
- Henkel Corporation

- Hexion
- INVISTA
- LP Building Products
- Oxiquim
- Queensland (Australia) Government
- Roseburg Forest Products Company
- Weyerhaeuser Company
- Willamette Valley Company

FACES OF WBC: JESSE PARIS



WBC STATUS: Former student

JOB TITLE: Chemist II, Fillers and
Extenders Group

COMPANY: Willamette Valley Company

DEGREE: PhD, Wood Science and Materials Science, 2014; MS, Wood Science, 2010

UNIVERSITY: Oregon State University (PhD) and Virginia Tech (MS)

JOB DESCRIPTION: As an R&D chemist, Paris is involved in numerous wood-products and composites research projects including fillers and extenders for a variety of adhesive chemistries, water-based wax emulsions and even learning more about mass timber building materials. Data analysis, method development, product formulation, lab panel production and testing, customer trials, and even attending sales presentations and academic conferences are all part of his job responsibilities.



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Member Benefits

Benefits of membership include precompetitive research, networking in a scientific forum, access to outstanding faculty from multiple universities and early access to students. Members share their research needs and industry-wide challenges; faculty translate this into project proposals for pre-competitive research. Industry advisory board members review proposals and select funded projects, often by consensus but always with a formal vote. They review progress and provide feedback to faculty and students at semi-annual meetings, and during conference calls between meetings.

"The industry members guided me to research topics I never would have selected under the federal research agenda," says Frazier. "Topics like biogenic formaldehyde and filler effects in plywood resins. We discovered great science with technological impact – the industry guidance transformed my career."

Examples of major research efforts include modeling the three-dimensional nature of the wood-adhesive interphase, adhesion challenges of specific wood species, how wood naturally makes formal-dehyde and product durability.

FACES OF WBC: KATE BRYANT



WBC STATUS: Former student

JOB TITLE: Technical Manager

COMPANY: Weyerhaeuser

DEGREE: BS, Wood Science, 2004; MS,

Forest Products, 2006

UNIVERSITY: Virginia Tech

JOB DESCRIPTION: OSB quality control and process improvement

FACES OF WBC: CHRISTA STABLES

WBC STATUS: Former student

JOB TITLE: Application Technologist II

COMPANY: Arclin

DEGREE: MS, Sustainable Biomaterials, 2017

UNIVERSITY: Virginia Tech

JOB DESCRIPTION: "I work in research and technology, acting as an interface between the laboratory and the customer. I verify our resin technologies in a practical sense, by creating customer products and testing them with industry standards."



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Industry Advancement

Members have reported positive economic impacts resulting from WBC membership. One member anonymously reported a \$10 million impact over a three-year period due to ideas generated from center research. The research is pre-competitive; the members exclude research on existing products and processes, but knowledge is generated that members can take home and use. In some cases, connection with WBC faculty leads members to private research contracts, separate from center activities, to help solve specific problems.

The WBC has offered 44 continuing education short courses since 1999. *The Wood Adhesion Short Course*, held 15 times since 2000, fills to near capacity each time it is presented. Over 1,000 individuals from 139 companies have

FACES OF WBC: ARIJIT SINHA



WBC STATUS: Former student

JOB TITLE: Associate Professor, Oregon
State University

COMPANY: Oregon State University

DEGREE: PhD, Wood Science and Engineering, 2010

UNIVERSITY: Oregon State University

JOB DESCRIPTION: "(I) conduct research
to increase the use of wood-based
composites in the built environment
by developing and characterizing
new materials, evaluating existing
materials under extreme exposures
and recommending categorical
improvements. I teach classes on
sustainability of building materials
and advanced wood design."

attended WBC short courses. A new WBC offering, focused on structural plywood and veneer-based composites, will be offered at Oregon State University in 2019. After many years in absence, this course made a come-back this year and will become part of the WBC short course portfolio under the leadership of Professor Scott Leavengood and OSU.

The WBC also sponsors the Wood-

Based Composites Online Short Course Series, which currently offers seven courses. Topics include: wood structure fundamentals, wood and water relationships, applied statistical methods, adhesion science, applied adhesive technology, wood strand composite manufacture and plywood and veneer-based composite manufacture. Each course offers approximately 10 hours of online instruction.

FACES OF WBC: KYLE MIRABILE

wbc status: Former student

JOB TITLE: Technical Sales Representative, OSB

COMPANY: Hexion Inc.

DEGREE: MS, Forestry and Forest Products, 2015

UNIVERSITY: Virginia Tech

JOB DESCRIPTION: "(I am the) liaison between customers, research and development chemists, manufacturing, supply chain and logistics to increase customer value by identifying current and future manufacturing needs."





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Access to the Next Generation

For many WBC members, the most important benefit of the Center is early access to technically trained hires, who have pre-selected the wood composites industry for their careers. Graduate and undergraduate students conduct member-requested research. They gain experience and confidence presenting results to members who, in turn, provide review and critique. Students gain a huge motivational charge when a roomful of industry leaders takes interest in their research and personal development. Members get to know the students well, and many extend job offers before students complete their degrees. It's a win-win for students and members.

A founding member of the WBC, Weyerhaeuser Company finds value in the students they have hired since 2000.

"Weyerhaeuser Company continues to gain considerable value from our

FACES OF WBC: SARAH EVERETT



WBC STATUS: Summer intern

JOB TITLE: Laboratory Technician Intern

COMPANY: Ashland

DEGREE: BS, Sustainable Biomaterials; Minor in Chemistry

UNIVERSITY: Virginia Tech, 2019

JOB DESCRIPTION: "(I am) responsible for preparing samples, testing new adhesive formulations, improving test methods and exercising safe handling practices. (Also) developing and improving industrial adhesives to mitigate hazards to homeowners and firefighters by increasing the durability of building materials at high temperatures.





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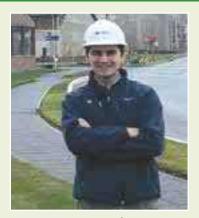
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FACES OF WBC: LUIS FELIPE MOLINA IRRIBARRA



WBC STATUS: Former student

JOB TITLE: Technical Assistant

COMPANY: Oxiquim S.A.

DEGREE: Civil Mechanical Engineer,

UNIVERSITY: University of Bío-Bío; BS Candidate, Oregon State

2018

JOB DESCRIPTION: "My job consists of quality assurance of adhesives used as engineered wood products. This creates value for our clients through technical support and improvement in the production processes, quality and final product."

FACES OF WBC: DANNY WAY



WBC STATUS: Former student

JOB TITLE: Senior Product (EWP)

Engineering Technician

COMPANY: Boise Cascade

DEGREE: PhD, Wood Science, 2018

UNIVERSITY: Oregon State University

JOB DESCRIPTION: "(I am) responsible for developing, planning, and managing engineering projects aligned with strategic business objectives."

association with the WBC," says Allan Bradshaw, vice president of engineering for the company. Weyerhaeuser has hired 11 graduates to work in mill operations and in the company's corporate technology center. "These graduates come to us with a disciplined approach to scientific inquiry and practical knowledge of our business. Their work contributes to outstanding product quality control for our customers and innovative product development that ensures our continued growth and profitability. We are proud to be associated with this exceptional

industry/academic partnership."

A member since 2014, Boise Cascade, too, seeks technically trained student recruits to replace retiring professionals.

"Through our membership in the Wood-Based Composite Center, Boise Cascade has had the opportunity to meet several participating students, hiring one in 2017 and another in 2018," says Dan Hutchinson, executive vice president, wood products, at Boise Cascade. "We have benefited from our affiliation with the WBC in both the technical and human resource arenas."





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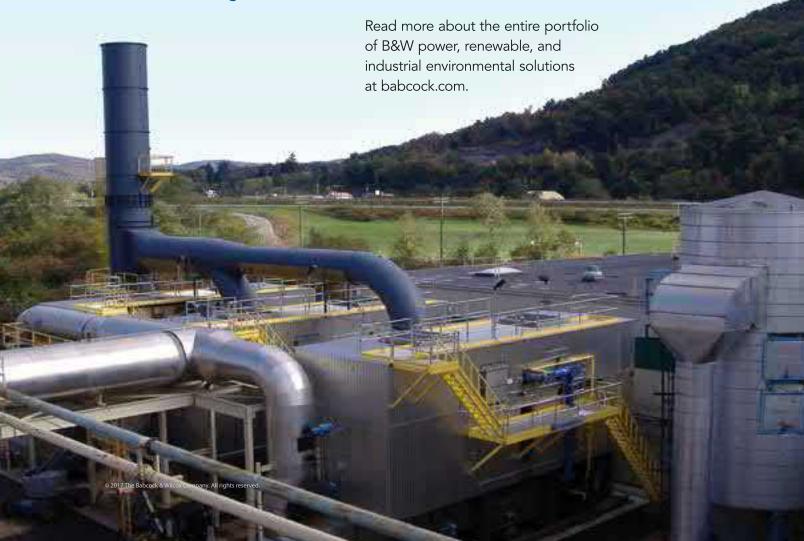


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Smaller companies see the benefit of hiring WBC students as well. Tony Vuksich, vice president, Willamette Valley Company, says the company has hired several WBC students and will continue to use the WBC to seek future talent.

"Being a member of the WBC has opened our eyes to the business value of finding young talent for the wood products industry through exposure to well-educated students," says Vuksich.

Likewise, past students appreciate the training they have received at the WBC, crediting the center with their success in their current careers. "The WBC gave me more opportunities than some of my colleagues, and I believe it better prepared me to enter the workforce," says Christa

Stables, an application technologist at Arclin who graduated from Virginia Tech with a master's degree in Sustainable Biomaterials in 2017. "I felt like I received a greater graduate school experience, as my research directly applied to the industry, and I was able to receive feedback from industry members about my results."

Arijit Sinha received his PhD in Wood Science and Engineering at OSU in 2010 and is now a professor there, teaching classes on sustainability of building materials and advanced wood design.

"Being a WBC student is a surreal experience where you are in close contact with the industry and academic leaders," says Sinha. "You are working on solving a problem or developing science that you know will benefit the industry at-large. WBC members are invested in your project and deeply care about your education and career."

Support is Critical

The ability of the WBC to grow depends on support from the industry. The more members contributing to the center, the more students it can bring in to do research.

FACES OF WBC: PAIGE MCKINLEY

WBC STATUS: Former student

JOB TITLE: Quality Control Supervisor,
Engineered Wood Products

COMPANY: Boise Cascade

DEGREE: MS, Wood Science and Engineering, 2016; BS, Wood Science and Forest Products, 2014

UNIVERSITY: Oregon State University (MS), Virginia Tech (BS)

JOB DESCRIPTION: "(I) lead the quality control and quality assurance department at Boise Cascade's White City Engineered Wood Products facility, where we manufacture LVL and I-joists."





Lonza

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"Young people are looking for meaningful careers where they can make a difference and meet their expectations for quality of life," says Kamke. "Financial support for their education, and the opportunity to contribute to meaningful research, attracts students to the WBC. They will be the future industry leaders. We've made progress, but we need more students and more WBC members to provide financial support. This is not a single-company issue, but rather an industry-wide effort."

The WBC is different from industry associations and government research labs because of its strong commitment to training students and providing continuing education programs. It differs from a single university offering research services to individual companies because its leaders regularly listen and respond to key industry representatives, provide a forum for debate on technical issues and leverage company financial support for the greater good of the industry.

The wood-based composites industry is vibrant, nimble and sustainable.

Nevertheless, short-term economic cycles are challenging; resource availability and prices fluctuate; environmental concerns are growing; technology is becoming more complex; other materials manufacturers are competing for markets; and young talent is needed to fill the pipeline

for an aging workforce. The WBC exists to meet these challenges. We are in it for the long haul.

Linda C. Caudill is the managing director of the Wood-Based Composites Center.

She can be reached at lcaudill@vt.edu





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APA ANNUAL MEETING AND INFO FAIR PREVIEW

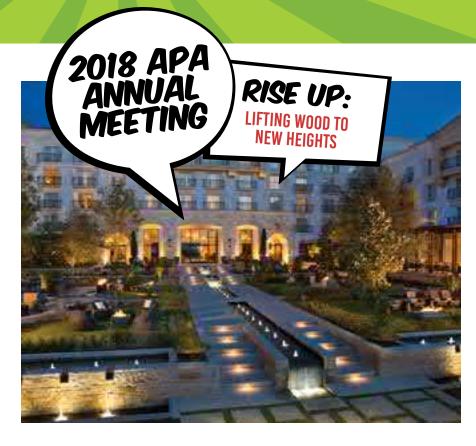
Rise Up: Lifting Wood to New Heights

rom the keynote speaker's discussion of wood's role in enhancing building health to a primer on trade policies, this year's Annual Meeting looks at the ways wood is continuing to shape and define our surroundings. Join APA – The Engineered Wood Association's member manufacturers, Engineered Wood Technology Association members and suppliers to the industry in an exploration of the opportunities and challenges of expanding markets, updated building codes, the APA lab's future testing capabilities and a developing workforce.

The Annual Meeting, held Oct. 27 – 30 at La Cantera Resort & Spa in San Antonio, Texas, coincides with EWTA's annual Info Fair supplier exhibition.

The theme of the annual meeting – Rise Up: Lifting Wood to New Heights – will inform the extended weekend's sessions, roundtables and presentations. The four days will be punctuated by cocktail hours, receptions and plenty of time for networking.

The weekend will kick off with several advisory, marketing and subcommittee meetings on Saturday – including those of the EWTA Adhesives and Technical Subcommittee and the EWTA Advisory Committee. The day wraps up with an EWTA-hosted welcome reception for



APA and EWTA members and meeting attendees.

Sunday is fun day, with the annual golf tournament, cripple coot shoot and tennis tournament. Info Fair opens that evening, accompanied by an EWTA-hosted reception.

Workshops and presentations make up the bulk of Monday's agenda, starting with the General Session. Tye Farrow, senior partner of architecture firm Farrow Partners Inc., will deliver the keynote presentation, sharing his insights into opportunities for expanded use of structural wood products to enhance building health in the coming decade. The General Session will also include "State of the Industry" and the "State of the Association" addresses by APA Chairman Jim Baskerville and APA President Ed Elias.



Tye Farrow



Joe Elling



John B. Ficker



Brian Ledgerwood



Jim Baskerville



Ed Elias

Farrow will lead a deeper discussion of mindful wood design in a Roundtable Discussion following the General Session

The Safety and Health Workshop offers breakout sessions throughout the day at which participants can discuss practical techniques and concepts for improving mill safety programs. A keynote speaker, representatives from Boise Cascade (2017 Innovation Award Winners) and others will give presentations and discuss best practices.

The mid-day Marketing Advisory Committee meeting will feature two speakers. Transportation and logistics specialist John B. Ficker will discuss the state of trucking and how it affects the wood products industry, and Brian Ledgerwood, with the U.S. Department of Commerce, will provide insights on U.S. government trade policy negotiations and the global competitiveness of the U.S. forest products and building materials industries.

The speakers will follow APA Market Research Director Joe Elling's delivery of his latest market forecast.

In addition to the Sunday evening reception, the Info Fair supplier exhibition will be open twice on Monday from noon to 1:30 p.m. (including a buffet lunch) and again from 5:30 to 7 p.m., coinciding with a reception to kick off that evening's APA Chairman's Dinner and Safety Awards Recognition. Here, APA members who have made significant advances in mill safety will be honored, along with winners of EWTA's Supplier and Innovation Awards.

As always, the Annual Meeting allows plenty of time for networking and relaxing. The spouses' program on Monday offers participants a unique opportunity to give back by building literacy kits for preschool and kindergarten students in the United Way Family School Community Partnership program. The hands-on event will be accompanied by lunch and a wine tasting featuring several local Texas wineries.

The APA registration desk at the resort opens on Saturday at 8 a.m. and continues through 5 p.m. See the schedule of events on page 40 for the complete meeting agenda.

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- USNR

Schedule of Events

(As of publication. Check the APA meeting agenda for latest schedule.)

| | OCT. 27 |
|--|---------|
| | |
| | |

| SATURDAT, UCT. 27 | |
|--|--|
| 8 am – 5 pm | APA Registration Desk Open |
| 10 am – Noon | International Market Subcommittee (closed) |
| 10:30 am – Noon | EWTA Adhesives and Technical Subcommittee (open to all attendees) |
| 12:30 – 2:30 pm | Glulam Management Committee (closed) |
| 2 – 2:30 pm | Info Fair Exhibitor Meeting (open to all exhibitors) |
| 3 – 4 pm | EWTA Advisory Committee (open to all attendees) |
| 3 – 5 pm | I-Joist Management Committee (closed) |
| 4 – 5:30 pm | Industrial Market Subcommittee (closed) |
| 4:30 – 5:30 pm | Chairman's Reception (invitation only) |
| 5:30 – 7 pm | EWTA Welcome Reception (All attendees welcome) |
| SUNDAY, OCT. 28 | |
| 8 am – 1 pm | Mike St. John Memorial Golf Tournament |
| 7:45 am – 2 pm | Cripple Coot Shoot |
| 10 am - 1 pm | Ole Sorenson Memorial Tennis Tournament |
| 11 am – 5 pm | APA Registration Desk open |
| 3 – 5 pm | Nonresidential Market Subcommittee (closed) |
| 5 – 7:30 pm. | Info Fair and Reception |
| 5 7.50 pm | The state of the s |
| MONDAY, OCT.29 | |
| <u> </u> | Buffet Breakfast |
| MONDAY, OCT.29 | |
| MONDAY, OCT.29 7 – 8:30 am | Buffet Breakfast |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm | Buffet Breakfast APA Registration Desk Open |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm | Buffet Breakfast APA Registration Desk Open General Session |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am 10:30 – 11:30 10:30 – 11:30 am | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated |
| MONDAY, OCT.29 7 - 8:30 am 8 am - 4 pm 8:30 - 10:15 am 10:30 - 11:30 10:30 - 11:30 am | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am 10:30 – 11:30 10:30 – 11:30 am 10:30 – Noon 10:30 am – 2:30 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program |
| MONDAY, OCT.29 7 - 8:30 am 8 am - 4 pm 8:30 - 10:15 am 10:30 - 11:30 10:30 - 11:30 am 10:30 - Noon 10:30 am - 2:30 pm 10:30 am - 5 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am 10:30 – 11:30 10:30 – 11:30 am 10:30 – Noon 10:30 am – 2:30 pm 10:30 am – 5 pm Noon – 1:30 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop Info Fair and Buffet Lunch |
| MONDAY, OCT.29 7 - 8:30 am 8 am - 4 pm 8:30 - 10:15 am 10:30 - 11:30 10:30 - 11:30 am 10:30 - Noon 10:30 am - 2:30 pm 10:30 am - 5 pm Noon - 1:30 pm 1:30 - 4 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop Info Fair and Buffet Lunch Marketing Advisory Committee |
| MONDAY, OCT.29 7 - 8:30 am 8 am - 4 pm 8:30 - 10:15 am 10:30 - 11:30 10:30 - Noon 10:30 am - 2:30 pm 10:30 am - 5 pm Noon - 1:30 pm 1:30 - 4 pm 5:30 - 7 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop Info Fair and Buffet Lunch Marketing Advisory Committee Info Fair and Reception |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am 10:30 – 11:30 10:30 – Noon 10:30 am – 2:30 pm 10:30 am – 5 pm Noon – 1:30 pm 1:30 – 4 pm 5:30 – 7 pm 7 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop Info Fair and Buffet Lunch Marketing Advisory Committee |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am 10:30 – 11:30 10:30 – 11:30 am 10:30 – Noon 10:30 am – 2:30 pm 10:30 am – 5 pm Noon – 1:30 pm 1:30 – 4 pm 5:30 – 7 pm 7 pm TUESDAY, OCT.30 | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop Info Fair and Buffet Lunch Marketing Advisory Committee Info Fair and Reception Chairman's Dinner and Safety Awards Recognition |
| MONDAY, OCT.29 7 – 8:30 am 8 am – 4 pm 8:30 – 10:15 am 10:30 – 11:30 10:30 – Noon 10:30 am – 2:30 pm 10:30 am – 5 pm Noon – 1:30 pm 1:30 – 4 pm 5:30 – 7 pm 7 pm | Buffet Breakfast APA Registration Desk Open General Session Rise Up: Lifting Wood to New Heights Roundtable Discussion (General Session follow-up): Special Presentation: Making Safety Stick – Communications so People Listen and are Motivated Residential Market Subcommittee (closed) Spouses' Program Safety and Health Workshop Info Fair and Buffet Lunch Marketing Advisory Committee Info Fair and Reception |



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Meeting and event sponsors are highlighted.

The **2018 EXHIBIT FLOOR PLAN** with booth numbers is shown on page 55

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Email: steven@ews-usa.com

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ENGINEERED WOOD TECHNOLOGY ASSOCIATION

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 Phone:
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 Fax:
 253-565-7265

Email: terryk@engineeredwood.org
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FOREST PRODUCTS LABORATORY

BOOTH No. 16

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The Forest Products Laboratory (FPL) is the national research laboratory of the United States Forest Service, which is part of the USDA. Since it's opening in 1910, the FPL has provided scientic research on wood, wood products and their commercial uses in partnership with academia, industry, tribal, state, local and other government agencies. The focus of the Forest Products Laboratory is to promote health forests and forest-based economies through the efficient, sustainable use of the nation's wood resources.



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Email: jayeschroeder@franklininternational.com Franklin Adhesives & Polymers, a division of Franklin International, manufactures adhesives for the

(continued in next column)

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Email: kstel@itipacksystems.com

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Email: michael.colwell@kadant.com

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77684 Highway 99 South Cottage Grove, OR 97424 Contact: Mike Simmons Phone: 800-942-4401

Email: msimmons@kimwood.com

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Email: jens.svensson@limab.com

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Atlanta, GA 30339 Contact: Steve Nielsen Phone: 604-271-8855

Email: steve.nielsen@lonza.com

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Panel World magazine is published six times per year and covers the domestic and international veneer, plywood, OSB and composite board industries.

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Veneer Services provides efficient and profitable machines, supplies, and services to the veneer, plywood, and panel industries. Factories in these industries use their wood waste to generate steam power. Biomass Engineering & Equipment has successfully developed storage, handling, and feed systems for the proper utilization of that wood waste.



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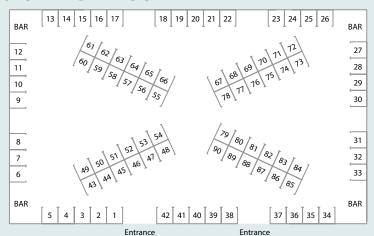








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- Wanhua Chemical (America) Co., Ltd.
- Wood-Based Composites Center

2018 SUPPLIER AWARDS

Innovation and Excellence Celebrated



INNOVATION OF THE YEAR - ENTRY A

Enhanced Bond Technology

Entered by: Arclin

Description: Arclin's Enhanced Bond Technology is specifically designed to improve adhesive flow, penetration, and ultimately the bond quality on wood surfaces that are notoriously difficult to bond. Resins incorporating Enhanced Bond Technology better cut through the chemically modified veneer surface to improve adhesive flow and penetration and to increase the depth and consistency of wood failure when gluing overdried veneer.



INNOVATION OF THE YEAR - ENTRY B

Innovative OSB Release Agent

Entered by: Chem-Trend

When using a resin such as pMDI that requires a release agent, traditional release agents darken the OSB panels to varying degrees. Certain markets demand a light-colored board and more end users prefer it when they see it. This product enables this to happen while maintaining other key performance attributes, such as memory and lack of interference with post-process adhesion.



Release Innovation™

INNOVATION OF THE YEAR - ENTRY C

Innovative Fluorine Grease Improvement for High Temperature Bearing Applications

Entered by: Idemitsu Lubricants America Corp.

Description: Idemitsu has taken an innovative approach in the development of new grease technology to help address bearing failures in continuous pressing machines. Bearings in high load or high temperature equipment require superior resistance to degradation by heat, pressure or contaminants. This solution

eliminates unscheduled downtime due to machine failures and reduces grease consumption from 100 kg per year to 10 kg per year for high temperature bearings.



INNOVATION OF THE YEAR – **ENTRY D**

Full Control System

Entered by: **IMEAS**

Description: The Full Control System is a recipe-driven automatic sander set-up for precise and repeatable surface quality. Motorized machine adjustments eliminate operator variability, and closed-loop thickness control is possible with downstream thickness gauge. The system offers increased throughput from reduced sander time, and quality variability due to operator input is eliminated. Case studies show an increase in throughput of approximately 20 percent.



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APA members will choose Supplier of the Year winners in three categories (Consulting/Services, Equipment/Tooling, and Materials/Supplies) based on quality, service and delivery. Below is a list of candidates (all EWTA members):

Consulting/Services (16)

Casey Industrial, Inc. CMA engineering Inc.

Cogent Industrial Technologies

Evergreen Engineering, Inc.

Hansen-Rice

Hunt, Guillot & Associates LLC

KTC Panelboard Engineering, Inc. Mid-South Engineering Company

Nondestructive Inspection Service

Panel World Magazine/

Hatton-Brown Publishers, Inc.

PMP Solutions

SEMCO

The HT Group

Union Pacific Railroad

University of Tennessee,

Center for Renewable Carbon

Wechsler Engineering & Consulting, LLC

Equipment/Tooling (67)

Adwest Technologies, Inc.,

A CECO Environmental Company **AkzoNobel Wood Adhesives**

A-Lert Construction Services

ALTEC Integrated Solutions, Ltd.

ANDRITZ Inc. **Argos Solutions AS**

Babcock & Wilcox MEGTEC **Baumer Inspection GmbH**

BRUKS Rockwood

Brunette Machinery Company Inc.

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FSOT

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FROMM Packaging Systems Globe Machine Manufacturing Company

GreCon

Grenzebach Corporation

IBC, International Bar Coding Systems

& Consulting Inc.

IMAL-PAL Group

IMEAS Inc.

Itipack Systems

KADANT Carmanah Design Kimwood Machinery, Inc.

Koch Knight, LLC

LIMAB Lundberg

Matthews Marking Systems

Meinan Machinery Works, Inc.

Mereen-Johnson LLC

Metriguard Technologies Inc.

Mill Machinery LLC NESTEC, Inc.

Nicholson Manufacturing Ltd. Pallmann Industries, Inc.

Panel Machinery & Controls, LLC

PFS - HAWE Hydraulik Practical Steam, Inc.

Raute **REA JET**

Rockwell Automation

Samuel Packaging Systems Group

Siempelkamp LP

Signode Packaging Systems

SonicAire

Spar-Tek Industries Spraying Systems Co.

Steinemann Technology USA, Inc.

Sweed Machinery, Inc. Taihei Machinery Works Ltd. **Tebulo Industrial Robotics** TIP - The Industry Pivot

TSI **USNR**

Venango Machine Company, Inc.

Veneer Services, LLC

Westmill Industries USA Corp.

WPS Industries / Eagle Project Services LLC

Materials & Supplies (38)

Albany International

Arclin - Performance Applied

Ashland – always solving ATCO Wood Products Ltd. **Axalta Coating Systems**

BASF - We create chemistry

Chem-Trend LP

Clarke Veneers and Plywood Coastland Wood Industries Ltd.

Covestro, LLC

Dominion Chemical Company, Inc.

Ecosynthetix

Engineered Coated Products, a division of

Intertape Polymer Group

Evertree

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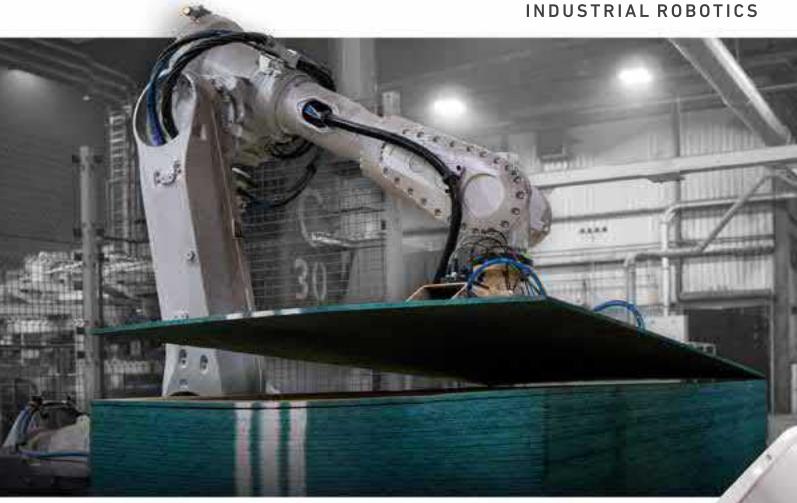
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TRANSPORTATION TROUBLES

As Tight as it Gets in the Trucking Industry

by Joe Elling

Manufacturers, retailers and others have consistently said in 2018 that securing components for production or goods for stocking shelves for sales has been frustrated by transportation delays. One industry logistics manager reports that ontime deliveries have fallen from between 92 and 96 percent to between 85 and 89 percent in the first half of this year. Given the strength in the economy through the second quarter, positive prospects for the rest of 2018 and momentum carrying into 2019, this is incenting businesses to place orders for goods earlier in order to secure their place in line so they will be received on time.

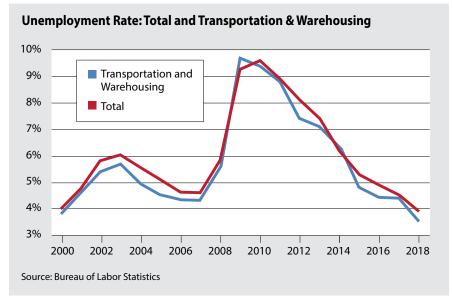
Given that the majority of wood products manufacturing facilities are located in rural locations, this makes them vulnerable to disruptions in service and greater increases in freight charges. This also means wood products distributors are incented to carry more inventory, especially in advance of the seasonally strong demand periods, thus adding more volatility to demand and product pricing.

Labor Shortage Affects Industry

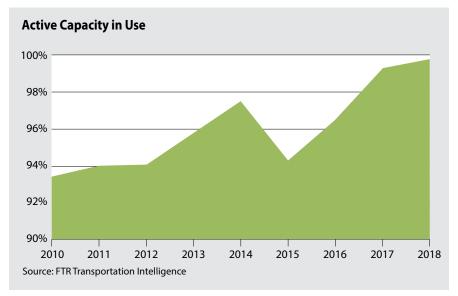
Similar to a number of industries, the trucking industry is severely supplyconstrained from a labor standpoint. The American Trucking Association estimates there is currently a shortage of 50,000 truckers. Employment in the trucking industry will be up 1.5 percent in 2018, meaning even more difficulty in finding labor. Based on data through June, the unemployment rate for the Trucking and Warehousing sector will average close to 3.5 percent this year relatively low. The sector unemployment rate will run below that of the economy in general for the fourth straight year. What will likely follow are the challenges to trucking firms in finding drivers and, in turn, less likelihood that goods will

be delivered on time. Using the BLS unemployment estimate and employment values, there has been no growth in the measured labor pool for the trucking industry since 2014, while the overall labor force in the U.S. has increased 4

percent. Like many traditional industries, trucking is challenged by a number of factors that make it difficult to attract people to the industry: the work is hard and dangerous, its schedule is disruptive to family life, pay is relatively low, the



The transportation sector unemployment rate will run below that of the economy in general for the fourth straight year.



The operating rate of trucks used for shipping freight in 2018 will be near 100 percent, slightly higher than in 2017, which was already a severely tight market.

industry is cyclical, and the inability to pass a drug test can immediately exclude many candidates.

Availability of Trucks, Fuel Costs Add to Problem

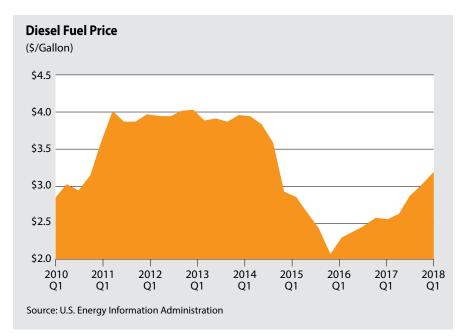
Scarcity of labor is one part of the supply side constraint. There is also the availability of trucks and trailers to deliver goods. Using the measure of Active Capacity in Use constructed by a leading industry consulting firm, the operating rate in 2018 will be near 100 percent, slightly higher than in 2017, which was already a severely tight market. In effect, there is no slack capacity in the industry and the competition for scarce available space on trucks means trucking firms are in a position to raise rates, which is signaling the opportunity to increase capacity.

Contributing to the increased cost structure of trucking firms is the higher price paid for diesel fuel. According to the U.S. Energy Information Administration, the price of diesel fuel averaged \$3.20 per gallon in the second quarter of 2018, up a little more than 25 percent from the second quarter of 2017. This steep increase) helps to explain why some firms have implemented a fuel surcharge to their rates.

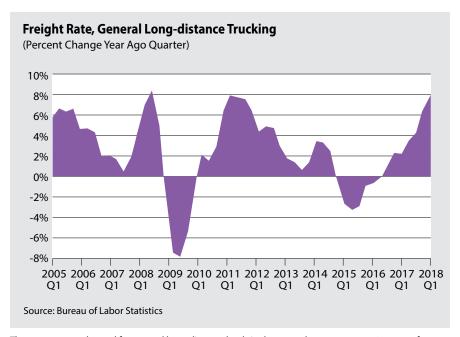
Reflecting the tight conditions and higher costs, freight charges have been on the rise. The Bureau of Labor Statistics (BLS) reports that the average rate charged for general long-distance hauls in the second quarter was up 8 percent from a year ago. The BLS data are most likely to track contract rates, and in some instances may not include fuel surcharges. Anecdotal reports suggest though that spot rates – the price paid for immediate shipping – have soared 30 percent to 80 percent compared to a year ago, depending on region of the country.

Little Relief Until Second Half of 2019...Maybe

Outside of some form of recession beginning later this year, which is not in the cards, it is difficult to see slack capacity developing until the second half of 2019. Enactment of the Electronic Logging Device (ELD) mandate earlier this year is going to be a factor constraining capacity growth. The regulation states that during a consecutive 14-hour period, a driver



According to the U.S. Energy Information Administration, the price of diesel fuel averaged \$3.20 per gallon in the second quarter of 2018, up a little more than 25 percent from the second quarter of 2017.



The average rate charged for general long-distance hauls in the second quarter was up 8 percent from a year ago.

may drive up to 11 hours after being off duty for 10 or more consecutive hours. The intents of the mandate are to promote a safer work environment and make it easier to more quickly and accurately track a driver's record of duty status. Some independent truck drivers are seeing the ELD mandate as a constraint on their ability to generate income and, as a result, are leaving the industry.

Implementation of the ELD mandate, plus the tight market in general, is leading to a surge in orders for new trucks and trailers. Orders for Class 8 trucks in the 12-month period running from July 2017 through June 2018 totaled 411,000. Industry experts estimate that if truck manufacturers were able to operate at full capacity, production could run as high as 360,000 units on an annualized

basis. However, truck manufacturers are reporting not being able to run at capacity due to delays in getting components to their plants. In addition, the tariffs imposed on steel and aluminum are causing their production costs to escalate. Trailer manufacturers are experiencing similar problems, as they try to meet the surge in demand. Flatbed sales at the end of 2017 were up 25 percent from the end of 2016 and could be up 35 percent this year, if all orders could be fulfilled.

Even if all the truck and trailer capacity needs could be met, there is still the issue of securing the labor to drive the trucks. Higher wages, bonuses and other incentives will continue to be used to entice people to move from one firm to another and entice others into the industry. This means higher costs and in turn higher prices, unless trucking firms can figure out ways to increase labor productivity. Perhaps a Catch-22 here is that firms implementing higher pay permile could incent some drivers to work fewer hours, as they can earn the same total income and are able to spend more time at home.

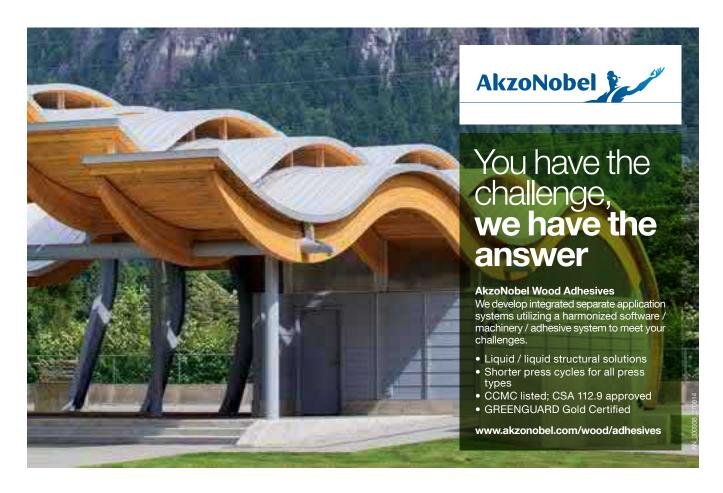
Transportation Issues Addressed at Annual Meeting

For more insight into how transportation issues are affecting the engineered wood industry, attend the Marketing Advisory Committee Meeting at the upcoming APA Annual Meeting. John Ficker, former CEO and president of the National Industrial Transportation League, will be a featured speaker at the Monday afternoon session. The APA Annual Meeting will be held Oct. 27 – 30 at La Cantera Resort in San Antonio, Texas.

Demand growth is likely to slow in 2020 as the stimulus from the tax cuts and spending increases enacted by the Trump administration wanes and the Federal Reserve stays the course on raising interest rates to more neutral levels. A critical uncertainty on the horizon is how long the protectionist trade policy

being pursued by the Trump administration remains in place and how affected countries react. Supply chains are already being disrupted by what has taken place so far and it is not clear that the administration fully understands the potential ramifications of their trade policy decisions. The uncertainty being created could negatively impact the incentive for freight transportation firms to stay the course in investment in capacity beyond 2019.

Joe Elling is the director of market research for APA – The Engineered Wood Association. He can be reached at joe.elling@apawood.org. He contributes frequently to the Engineered Wood Journal. His most recent article discussed the state of the repair and remodeling market in the Spring 2018 issue.





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THE MISSING PUZZLE PIECE

Is Engineered Wood Ready for Big Data?

by Timothy M. Young

Editor's note: This article is the second in a series addressing how "big data" is being used in the engineered panel manufacturing industry. The first article, "Advanced Analytics," ran in the Autumn 2016 issue of the Engineered Wood Journal.

redictive analytics, data mining and the use of big data have become paramount in today's business world for competitive advantage. While this is a prerequisite for such online businesses as Google, Netflix, Travelocity and Amazon, this technology can offer a competitive advantage for the engineered panel industry as well.

Many engineered panel manufacturers in North America are looking into the use of data mining and big data for a more competitive advantage. But are they going about it in a way that will produce the best results? Applying data science to engineered panel manufacture is not attainable without good data quality and digital data integration. Data can only provide value if they are of good quality. Specifically, are they correct, reliable and complete?

A shortcoming of deriving value from data in the engineered panel industries is the lack of availability of an integrated data system. In most companies, the destructive test data cannot be easily aligned with the process data stored from programmable logic controllers (PLC) in the data warehouse. For data science to provide a competitive advantage, it must be included in a company's continuous improvement programs, also known as Total Quality Data Management. Data science is the missing piece of the puzzle for the engineered panel industries.

The correct application of data science in the engineered wood manufacturing industry will optimize processes and fine-tune output. Predictive analytics can quantify process variation and identify unknown sources of variation in product weight, panel thickness, solvent applica-

tions, moisture, etc. Variation reduction is fundamental to any continuous improvement initiative. The more variation in a process, the higher the required operational targets and the higher the costs of manufactured product. Predictive analytics can also prevent downfall from delaminations or failing properties, and reduce the reruns of the order file to missed specifications – both of which contribute to substantial annual costs for companies with high-capacity mills.

Changing Roles of Workers

The roles of managers in the engineered panel industries are dramatically changing with the evolution of data science in manufacturing. Future managers will use data and predictive analytics in morning meetings to assess daily variation of key process variables, such as resin usage, weight and thickness. Variation and data science will become a vital management philosophy. Managers of the future will require skill sets in basic statistics, statistical modeling, reliability statistics and data management.

Similarly, the role of the industry's technical director has changed. Conformance verification from destructive testing is like driving your car looking in the rearview mirror. The technical director of the future will have combined roles of continuous improvement, lab management, quality control and data science. He or she will be the "data scientist" for the mill and be responsible for Total Quality Data Management and predictive analytics. This knowledge will also be coupled with knowledge of engineered wood science.

The role of operators is also continuing to evolve. The word "operator" in a mill environment is an outdated 20th century concept: people no longer physically operate machinery in engineered panel plants. Operators now sit at desks in front of a bank of computer monitors and big-screen TV displays monitoring data trends in the process. As data

science evolves to include predictive analytics, the control room will instead require data analysts. The skill set of these analysts will require the ability to interpret statistical outputs and statistical graphics of the process. Their decisions to make process adjustments will become data-based evaluations from displays of key variables in the context of real-time statistical process control and outputs from predictive models. Is the engineered panel industry ready for this revolution in data science?

Wood-Based Academic Programs and Industry 4.0

It is important to discuss the evolution of academic programs in wood science, now widely called "sustainable biomaterials" at universities. To meet the industry needs of the new era of data science and predictive analytics, universities must produce a student that understands the fundamentals of wood science and engineered panel manufacture, but also one that has a fundamental understanding of statistics, statistical modeling, database management, digital database integration and programming. Curricula at universities in sustainable biomaterials must evolve to include course work in these data science disciplines.

Many universities say they are including these subjects in the students' curricula, but most produce students that are ill-equipped in the knowledge of data science combined with a knowledge of engineered panel manufacture. It is time for universities to "walk the walk" and not just "talk the talk." Are academic programs in sustainable biomaterials truly committed to education in data mining, big data and predictive analytics?

Timothy M. Young, Ph.D, is a Professor at the University of Tennessee's Center for Renewable Carbon. He can be reached at tmyoung1@utk.edu, also see www.spc4lean.com for his industry involvement.



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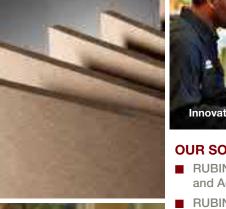
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MEMBER SAFETY

APA Announces Previous Year's Safety Awards

PA – The Engineered Wood Association recently announced the winners of its 2017 Safety and Health Awards, a program that encourages and recognizes safety and operational excellence in the North American structural panel and engineered wood industry.

SmartLam LLC and LP won
Safest Company Awards in their
respective categories. SmartLam LLC,
which produces cross-laminated timber
at its facility in Columbia Falls, Mont.,
won the award for companies with three
or fewer mills. The company posted a
4.19 Weighted Incident Rate (WIR) for
2017. LP, a producer of engineered wood
products in the U.S., Canada and South
America, earned top honors among
companies with four or more mills, with
a 2017 average WIR of 3.16.

The coveted Innovation in Safety Award went to two winners: Boise Cascade Company of Medford, Ore., for the Equipment-Based Innovation Award and Boise Cascade Company of Oakdale, La., for the Jeff Wagner Process-Based Innovation Award.

Seventy-five APA-member structural wood panel and engineered wood product facilities in the U.S., Canada and abroad participated in the 2017 program. A total of 10 facilities representing six APA member companies – Boise Cascade Company, LP, Louisiana-Pacific Canada Ltd., Norbord, RoyOMartin and SmartLam LLC – earned awards in various competition categories.

In addition to the Safest Company and Innovation awards, other competition categories include Safety Improvement, Annual Safety and Health Honor Roll, 3-Year Safety Award and Incident Free Honor Society. Twelve mills



achieved a zero incident rate for the year and thus were named to the Incident Free Honor Society. The annual honor roll, three-year average and safety improvement categories are divided into three divisions based on the type of product manufactured at the mill.

While the program awards are limited to APA members, data is collected from both member and non-member mills in order to provide

| INCIDENT FREE HONOR SOCIETY | Product | WIR* | TIR** |
|---|---------|------|-------|
| LP Brasil Ponta Grossa, Brazil | OSB | 0.00 | 0.00 |
| LP Panguipulli, Chile | OSB | 0.00 | 0.00 |
| LP Hanceville, Alabama | OSB | 0.00 | 0.00 |
| LP Red Bluff, CA | Ŋ | 0.00 | 0.00 |
| LP Roxboro, NC | OSB | 0.00 | 0.00 |
| LP Two Harbors, MN | OSB | 0.00 | 0.00 |
| Louisiana-Pacific Canada Ltd. Dawson Creek, British Columbia | OSB | 0.00 | 0.00 |
| Louisiana-Pacific Canada Ltd. <i>Maniwaki,</i> Quebec | OSB | 0.00 | 0.00 |
| Norbord Jefferson, TX | OSB | 0.00 | 0.00 |
| Norbord LaSarre, Quebec | OSB | 0.00 | 0.00 |
| Norbord Lanett, AL | OSB | 0.00 | 0.00 |
| Tolko Industries Ltd. High Prairie, Alberta | OSB | 0.00 | 0.00 |

^{*} Weighted Incident Rate (WIR)

^{**} Total Incident Rate (TIR)

APA Safety and Health Advisory Committee Members

Terry Evans, *Chairman* Boise Cascade Co.

Sam Newbill, Vice-Chairman Hood Industries Inc.

Greg Ellisor Weyerhaeuser

Keith Harned

Josh Jenkinson Structurlam Mass Timber Corp.

Bryan Kimball Murphy Company

Jocelyn Lagrace EACOM Timber Corp.

John Myers Roseburg Forest Products Co.

Peter Quosai Norbord

Terry Secrest RoyOMartin

Mitch Vezina EACOM Timber Corp.

a broad-based industry performance benchmark. A total of 76 mills reported data for 2017. The 2017 industry Total Incident and Weighted Incident Rates were 8.43 and 1.77, respectively.

The winning facilities and companies will be recognized and their safety accomplishments celebrated during the Chairman's Dinner at APA's Annual Meeting in October in San Antonio, Texas. Award plaques also will be presented to the winning mills by senior APA management staff.

"The objective of this awards program is to recognize and honor manufacturers who go above and beyond to ensure that all employees go home to their families at the end of each shift," says APA President Ed Elias. "The stellar records achieved in these winning mills speak to a strong corporate commitment to the safety and well-being of all employees."

INNOVATION IN SAFETY AWARD

Equipment-Based Innovation Winner:

Jeff Wagner Process-Based Innovation Winner:

Boise Cascade Company – *Medford, OR* "Belt Hold-Down"

Boise Cascade Company – Oakdale, LA "Splinter Reduction Video"

| SAFEST COMPANY AWARDS | AVERAGE WIR | AVERAGE TIR |
|---|-------------|-------------|
| Smartlam, LLC (Companies with three or fewer member mills) | 4.19 | 4.19 |
| LP (Companies with four or more member mills) | 3.16 | 0.56 |

| ANNUAL SAFETY & HEALTH HONOR ROLL | | |
|--|------|------|
| Division I (Plywood) | WIR | TIR |
| 1st Place Boise Cascade Company – Chester, South Carolina | 0.73 | 0.73 |
| 2nd Place Boise Cascade Company – Kettle Falls, Washington | 1.04 | 1.04 |
| Division II (OSB) | WIR | TIR |
| 1st Place LP – Ponta Grossa, Brazil | 0.00 | 0.00 |
| 2nd Place LP – Panguipulli, Chile | 0.00 | 0.00 |
| Division III (Glulam, I-Joist and SCL) | WIR | TIR |
| 1st Place LP – Red Bluff, California | 0.00 | 0.00 |
| 2nd Place Louisiana-Pacific Canada Ltd. – Golden, British Columbia | 0.30 | 0.30 |
| | | |

3-YEAR SAFETY AWARD (2015-2017)

| Division I (Plywood) | Avg. WIR | Avg. TIR |
|--|----------|----------|
| RoyOMartin – Chopin, LA | 3.97 | 1.85 |
| Division II (OSB) | Avg. WIR | Avg. TIR |
| LP – Panguipulli, Chile | 0.00 | 0.00 |
| Division III (Glulam, I-Joist and SCL) | Avg. WIR | Avg. TIR |
| LP – Red Bluff, California | 0.00 | 0.00 |

SAFETY IMPROVEMENT AWARD (2015-2017)

Division I (Plywood)

| Boise Cascade Company – Chester, South Carolina | | | 94% lmp | rovement | |
|---|----------|----------|----------|----------|----------|
| 2015 WIR | 2016 WIR | 2017 WIR | 2015 TIR | 2016 TIR | 2017 TIR |
| 12.52 | 5.98 | 0.73 | 1.96 | 1.56 | 0.73 |

Division II (OSB)

| Norbord – La Sarre, Quebec | | | | 100% lmp | provement |
|----------------------------|----------|----------|----------|----------|-----------|
| 2015 WIR | 2016 WIR | 2017 WIR | 2015 TIR | 2016 TIR | 2017 TIR |
| 3.59 | 0.68 | 0.00 | 0.72 | 0.68 | 0.00 |

Division III (Glulam, I-Joist and SCL)

| Louisiana-Pacific Canada Ltd. – Golden, British Columbia | | | ritish Columbia | 94% lmp | provement |
|--|----------|----------|-----------------|----------|-----------|
| 2015 WIR | 2016 WIR | 2017 WIR | 2015 TIR | 2016 TIR | 2017 TIR |
| 5.06 | 1.04 | 0.30 | 1.56 | 1.04 | 0.30 |

Thompson Leaving APA After 33 Years; Mattina Joins Staff



Retiring this year after 33 years at APA is Marilyn Thompson, APA's market communications director and corporate secretary. Thompson started with the association as a writer in the Information Services Division. She soon was promoted to manager of publications and also coordinated the Distribution Markets segment of what would eventually become the APA Strategic Marketing Plan. She later became the market coordinator for both the Nonresidential and Residential Construction segments, and eventually directed the Industrial and Supporting Market segments as well. She coordinated more than a decade of APA

Annual Meetings and Info Fair events.

In more recent years, Thompson served as the director of the Market Communications Division and oversaw APA's foray into the online realm. APA's family of websites began in 1996, and Thompson helped boost usership to more than 2.2 million individual page views in 2017. She oversaw the effort to move APA's library of publications to the web, and through APA's websites last year, the association electronically distributed more than 350,000 copies of 600 separate titles.

With her retirement from APA, Thompson relinquishes a number of titles, including APA Corporate Secretary, Staff Advisor to the Glulam Management Committee, Staff Advisor to the SCL/I-Joist Management Committee, APA Representative to the Canadian Wood Council Board of Directors and Staff Advisor to the APA Fire Task Group.

Taking over for Thompson as director of the Market Communications Division

is Tara Mattina, who has served as the communications director for the Port of Tacoma for the past 11 years. Mattina



brings leadership experience in crisis management, trade and environmental initiatives, and communication outreach through websites, newsletters, publications, media relations, event management and speech writing. She holds a B.S. in Journalism from California Polytechnic State University in San Luis Obispo.

Additional recent **APA staff changes include:**

RETIREMENTS

- Mary Trodden, Typographer
- Carl Larson, Quality Analyst
- Steve Scott, Quality Services Region Manager

NEW HIRES

- Emily May, Quality Auditor
- Bill Reaney, Quality Auditor
- Angie Dollar, Graphic Designer
- Wendy Walters, Administrative Assistant
- Cathy Scarince, EWS, Dallas
- JoLeah Parker, Graphic Designer
- C. Bart Olsen, Quality Auditor
- E. Ray Concepcion, Associate Technician, TSD

EWTA Holds Spring Membership Meeting

The Engineered Wood Technology Association held its spring advisory committee meeting at APA headquarters on May 10. Members in attendance received an update on EWTA membership, research projects and communications efforts. The committee approved the nomination of Adam Brennen of HB Fuller, replacing Daniel Gonzalez, who retired. The meeting also included a market outlook report by APA staff.

Following the meeting, attendees were treated to a tour of the APA research laboratory, including a presentation of the upcoming \$4.5 million lab expansion project.

EWTA reported strong financial footing, with net reserves of more than \$221,000. A total of \$78,000 went to industry research in 2017 with \$100,000 budgeted for 2018.

Design Team Chosen For APA Lab Expansion

Construction began in September on the new lab at APA - The Engineered Wood

Association's headquarters in Tacoma, Wash. The renovation will support significant upgrades to APA's research and testing capabilities to support innovative code and construction provisions for wood structural panels, engineered wood products and mass timber assemblies.

The \$4.5 million project includes structural modifications to 25 percent of the current floor area to create a 70-ft by 75-ft "strong floor." The roof will also be raised to 40 ft directly above the expanded floor space.



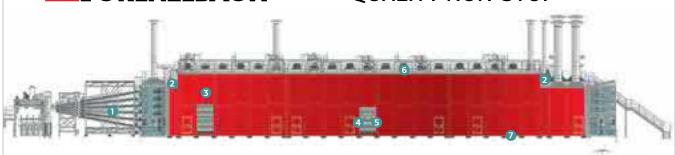


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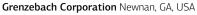


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- 4 Sine-wave system reducing the waviness of wet and difficult to dry veneer species
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- Three flow-optimized air distribution zones and a balanced air volume over all decks for uniform drying results
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EWTA Welcomes Three Member Companies to Association

Three new members have joined or rejoined EWTA since the publication of the Spring *Engineered Wood Journal*, bringing the association's membership count to 121. The following are members who have joined since the Spring issue of the *Engineered Wood Journal*:

• Former EWTA member Covestro LLC (www.covestro.com) has returned to the association. Covestro, based in Pittsburgh, Penn., is a global leader in high-tech polymers and creative

solutions that positively impact people's lives every day. Senior Marketing Manager Ian Hughes can be reached at ian. hughes@covestro.com.

• FROMM Packaging Systems,

frommstrappingsystems.com of Boonton, N.J., develops and produces a wide variety of systems for unitizing and palletizing goods for transport: strapping machines/systems and pallet stretch wrapping machines, together with all necessary consumables.

Equipment manager Francesco Belloni can be reached at francesco.belloni@airpadusa.com.

• Practical Steam Inc.,

(www.practicalsteam.com) of Kennesaw, Ga., provides energy generation and reclamation solutions through steam-driven motors, as well as associated equipment. CEO Patrick Paul can be reached at ppaul@ practicalsteam.com.

Leeper Retiring From Advisory Committee

Dale Leeper, a member of the EWTA Advisory Committee and PF Technology Manager for member company Hexion, retired from both positions Aug. 31. Leeper has served on the EWTA committee since 2010. He also served on the standing committee that oversees revisions to PS 1 and PS 2.

Leeper has worked at Hexion since 1978, when the company's name was Borden Chemical. Positions he held within the company include lab technician, sales associate and lab manager.

USNR Names New President, Other Staff

USNR recently announced the promotions of four long-time USNR and Mid-South Engineering employees. (USNR acquired Mid-South last year.)

Dale Brown was named president of USNR. Brown joined USNR as an accounting clerk in 1986 and has been promoted within the company several times since.

Eric Brousseau was named vice president-manufacturing, Chuck Van Horn was named vice president-capital projects and Mark Culpepper was named vice-president-turn-key projects.

New COO Hired At Globe Machine

Globe Machine Manufacturing Company recently appointed Des McGahern as its chief operating officer. Most recently, McGahern was the general manager at Windfall Lumber in Tumwater, Wash., where he steered the young start-up company toward stable operations and implemented crucial business systems. He previously held operations management positions at H2O Jet, Simpson Door Company and Albany International Corp.



TIP Changes Name To SMARTECH

TIP-The Industry Pivot has changed its name to SMARTECH. Based in Israel, SMARTECH offers wax suspension systems to production lines in the engineered wood industry. The company is also expanding its footprint to Asia and Europe.

Combilift Celebrates New Production Plant

Combilift recently celebrated the opening of its new 46,500-sq-meter production factory in Monaghan, Ireland. With 11 acres of space, it is one of the largest manufacturing operations under one roof in the Republic of Ireland. The new factory will enable Combilift to double its output in a single shift across all production lines. Four 90-meter moving assembly lines produce a finished truck every 15 minutes.



BASF Helps Fund Berkeley Research Lab

BASF announced in July that it will donate \$7 million toward the construction of a new state-of-the-art, interdisciplinary research chemistry facility at the University of California, Berkeley. Research conducted in the new "Berkeley Science and Engineering Hub" will converge the expertise of chemists, biologists, engineers, computer scientists, ecologists, social scientists, policy experts, economists, entrepreneurs and industry and civic leaders.

The announcement was made by Martin Brudermüller, chairman of the board of executive directors and chief technology officer, BASF SE, as part of his keynote lecture at the California Research Alliance (CARA) 2018 Summer Symposium in Oakland. CARA is one of four BASF scientific excellence clusters that collabo-

rate with research groups on a regional level, maintaining a network between BASF, the campuses of the University of California system, Stanford and Caltech. The researchers at CARA work in a variety of scientific disciplines including new materials, biosciences, formulations and catalysis, as well as computational and engineering disciplines.

BASF Wins Leadership Award

BASF has been recognized as a Manufacturing Leadership Awards winner for outstanding achievement in operational excellence at its Monaca, Penn., facility.

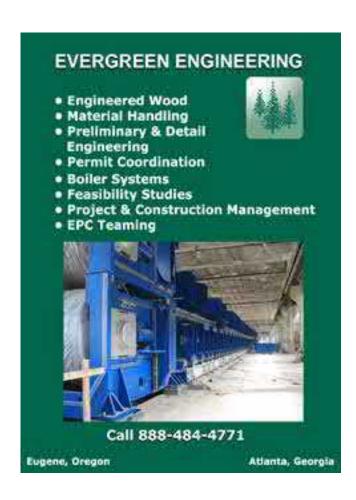
The awards are sponsored by the business consulting firm Frost & Sullivan and honor manufacturing companies and individual manufacturing leaders that are shaping the future of global manufacturing.

BASF's winning project improved manufacturing performance while systematically reducing waste and increasing production capacity of Acronal, an acrylic dispersion product at the Monaca location, a critical manufacturing site for BASF's Dispersions Network.

Argos Expanding To North America

Norway-based Argos Solutions AS recently announced that it is expanding operations to North America with the opening of the Argos Solutions LLC branch in Apex, N.C. The new office will support future expansion in the U.S. as well as Canada, Mexico and eventually South America.

The new U.S. branch will be managed by Richard Lepine, who has 20 years of experience in the wood composite industry.

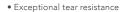








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2018

OCTOBER

- **17-19** Timber Processing and Energy Expo, Portland, Ore., www.timberprocessingandenergyexpo.com
- 27-29 APA Annual Meeting and EWTA Info Fair, San Antonio, Texas, www.apawood.org, www.engineeredwood.org

NOVEMBER

- **6-8** 2018 North American Association of Floor Covering Distributors + North American Building Materials Distribution Association Annual Convention, Dallas, Texas, www.distributorconvention.org
- **7-9** North American Wholesale Lumber Association (NAWLA) Traders Market 2018, Chicago, Ill., www.nawla.org
- **14-16** Greenbuild International Conference and Expo, Chicago, Ill., www.greenbuildexpo.com
- **27-30** Western Pulp, Paper and Forest Products Safety and Health Conference, Portland, Ore., osha.oregon.gov/conferences/western/Pages/index.aspx

2019

FEBRUARY

19-21 National Association of Homebuilders International Builders' Show 2019, Las Vegas, Nev., www.buildersshow.com

MARCH

12-14 Dubai WoodShow, Dubai, United Arab Emirates, dubaiwoodshow.com/en/

MAY

- 5-7 Composite Panel Association Spring Meeting, Naples, Fla., www.compositepanel.org
- 27-31 LIGNA 2019, Hanover, Germany, www.ligna.de

JUNE

- 6-8 AIA Conference on Architecture 2019, Las Vegas, Nev., conferenceonarchitecture.com
- **26-28** Southern Forest Products Association, 2019 Forest Products Machinery and Exposition, Atlanta, Ga., sfpaexpo.com

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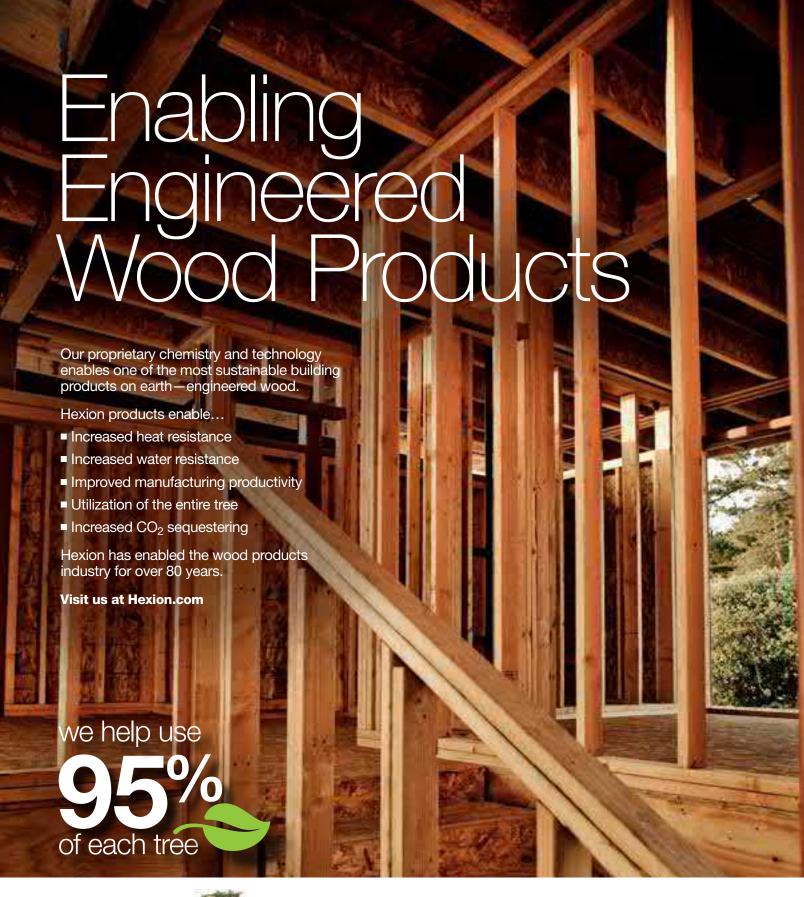
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