

Annual Report 2008



Oregon Wood Innovation Center

Connecting People, Ideas, and Resources

Companies OWIC assisted in 2008:

★ = 10 +

Eugene, Portland

★ = 3

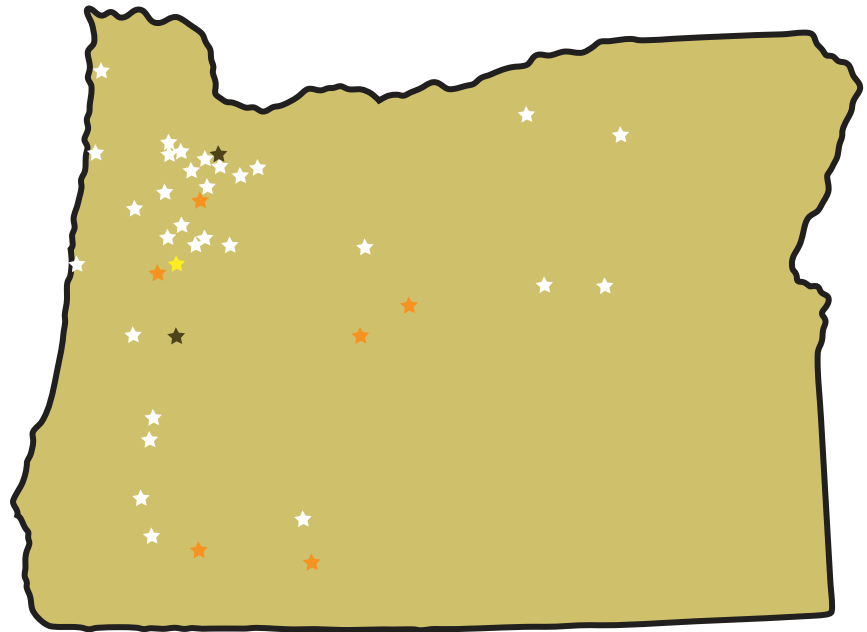
Albany

★ = 2

Bend, Corvallis,
Klamath Falls,
Medford, Prineville,
Woodburn

★ = 1

Astoria, Aumsville,
Aurora, Bay City,
Beaverton, Boring,
Chiloquin,
Clackamas, Forest
Grove, Glendale,
Hillsboro,
Independence,
John Day,
Lake Oswego,
Lyons, McMinnville,
Newport, Noti,
Pendleton, Salem,
Sherwood,
Sutherlin, Turner,
Warm Springs



OWIC: Why, What, and Who?

The Oregon Wood Innovation Center (OWIC) was established in December 2005. Our mission is to improve the competitiveness of Oregon's wood products industry by fostering innovation in products, processes, and business systems.

OWIC links university-based research with the needs and opportunities of Oregon's forest industry. OWIC is housed in the College of Forestry at OSU. All faculty in the Department of Wood Science & Engineering at Oregon State University are involved in the activities of the Center.

Introduction

The end of 2008 marked the completion of the third year of operations for the Oregon Wood Innovation Center. As in the first two years, we continued to emphasize **connections** to help Oregon wood products firms to face today's challenges and address short-term opportunities. We worked to connect industry personnel with sources of information, help connect buyers and sellers of Oregon forest products, and enable industry professionals to network. We made such connections through educational workshops, web-based resources, and technical assistance.

- At the same time, we set our sights on longer-term opportunities that will benefit the state's forest cluster as a whole. In 2008, OWIC faculty worked with a multiagency group tasked with developing an economic development strategy for the State's forest cluster. The governor and legislature will rely on this strategy as they make decisions regarding forestry and forest industry policies. One near-term outcome of this effort has been the inclusion of a forest cluster initiative in the 2009 *Innovation Plan 2.0* of the Oregon Innovation Council.
- In this report, we describe the challenges and opportunities facing Oregon's forest industry, our activities and accomplishments this past year, and our direction for the future.

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As one industry veteran stated late in the year, Oregon's forest industry started to feel the impacts of the recession about 18 to 24 months before the nation as a whole. And, if that's not bad enough, no one seems to doubt that things are going to get worse before they get better.

At the same time, many recognize that we must "grow our way out" of the recession, and **innovation** is key to that growth. The forest industry has a well-established track record of success in reducing costs and improving yields by developing and adopting process innovations such as scanning and optimization systems. Cost reduction and yield optimization will always be important; however, adding an emphasis on product innovation and business systems innovations will help to create and maintain long-term competitive advantage.

At the 2008 Oregon Business Summit of the Oregon Business Council, several other key areas of opportunity for the state's forest cluster were unveiled. Chief among these opportunities is the well-known issue of **supply**. Oregon's leaders are working closely with federal agencies to enable the Oregon Department of Forestry to participate more directly in federal forest restoration efforts. A key outcome of this effort will be more reliable and sustainable timber supply for Oregon mills, particularly for companies in rural communities east of the Cascades.

Other opportunities recognized at the Business Summit are related to **green building** and **sustainability**. Oregon is a well-known hotspot of sustainability and has a strong forest industry. In fact, Oregon has long led the nation in softwood lumber and panel production. OWIC faculty are actively working to develop opportunities for synergy between green building and the forest industry and, as a result, enhance demand for Oregon products.



Business owners comment on our services:

"Our engineer recommended we take advantage of OSU's state-of-the-art testing laboratory at the Wood Innovation Center. So we did, and the results were very good. Having such a high quality laboratory so close is a real plus for Oregon businesses. OSU researchers Rakesh Gupta, Milo Clauson, and Kenny Martin offered both expertise and excellent service to our company."

Last but not least, needs related to **workforce** development are now front and center. The decline in forest sector employment in Oregon has been widely publicized; less well publicized is the current and future need for skilled employees arising from retirements and changing skill needs. Our efforts in this area are directed at offering continuing education opportunities for existing employees, ensuring that our students have the skills required for the workforce of the future, and linking Oregon firms with our students—for permanent positions, as well as for internships and problem-solving research projects.

"Thanks for what you do. The information you supply helps me provide a second income for my family and the development of our small land-owner forest."

—Oregon woodland owner

"The testing you have done for us resulted in \$20 million per year in sales for us for one species and an increase from \$60,000 per month to \$500,000 per month for another species."

2008 Activities and Accomplishments

OWIC Annual Report 2008

We focus on making connections—linking people to state-of-the-art information in wood technology and business management, fostering the development of a statewide information infrastructure for the forest cluster, and providing networking opportunities for industry personnel. Our specific activities related to these tasks include workshops, web-based resources, and technical assistance.

Workshops

As the nation's forest industry curtailed operations because of the housing slump, our workshop offerings also were scaled back this year. OWIC faculty offered five workshops this year for approximately 130 participants. Our offerings included four well-established courses:

- *Lumber Quality Control*
- *Lumber Quality Leadership*
- *Selling Forest Products*
- *How to Dry Lumber for Quality and Profit*

We had one new offering this year—*Advanced Wood Adhesives*.

In addition, Fred Kamke, JELD-WEN Chair of Wood-Based Composites Science, and Bill Bohner, affiliate faculty in Wood Science & Engineering, continued to develop the Wood-Based Composites Distance Learning Program. Three modules were completed this year:

- *Wood Structure*
- *Wood and Water Relationships, and*
- *Applied Statistical Methods*

The first course will be offered in April of 2009; the complete 19-module course is expected to be available by the end of 2010.

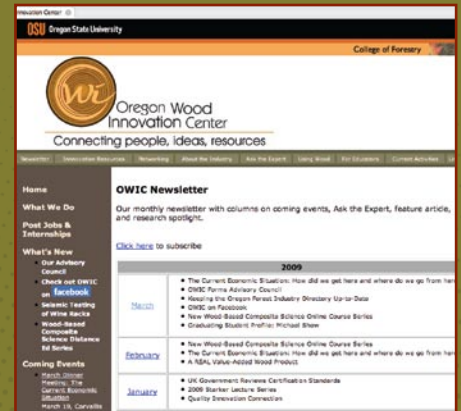
Web-based Resources

We continue to develop and maintain electronic resources to help connect people with information and with one another. A few examples are our monthly newsletter (owic.oregonstate.edu/newsletter/), the on-line Ask the Expert forum (owic.oregonstate.edu/askexpert.php), and the Oregon Forest Industry Directory (www.orforestdirectory.com).

This year, our newsletter included a series of six articles on topics related to innovation in the forest industry. We also provided readers with updates on hot topics, such as potential impacts to importers of recent changes in the Lacey Act, results of research on the tsunami resistance of wood structures, recent revisions to green building codes, new developments related to formaldehyde regulations, and even ongoing research related to baseball bats.

We fielded several dozen questions though our *Ask the Expert* forum this year. Topics ranged from common questions, such as where to sell black walnut logs, to much less common topics, such as use of wax from Douglas-fir bark, carbon dating in fossilized trees, Oregon's laws related to timber theft, how to set pitch in large Douglas-fir timbers in a dehumidification kiln, which oak species are good for the wine barrel of the future—and the list goes on!

Lastly, the Oregon Forest Industry Directory continues to be a popular tool to help connect buyers and sellers of Oregon forest products. The site registered nearly 2.5 million hits this year, over twice as many as last year; and use of the more advanced features of the site increased significantly this year, as well. For example, in prior years the site has been used much the same as the yellow pages. That is, although thousands of visitors searched for company contact information, few visitors registered to enter their company into the directory or used the more advanced features, such as forms, to contact company personnel or to post a classified ad. In 2008, over 200 new users signed up and nearly 100 classified ads were posted.



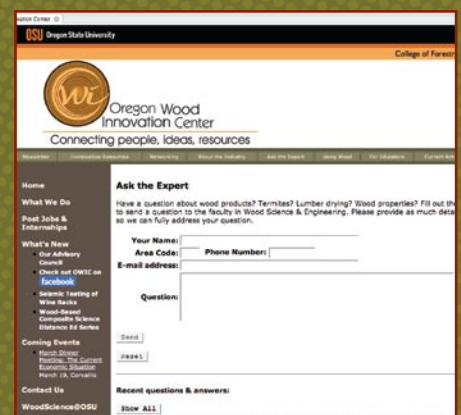
owic.oregonstate.edu/newsletter/

"Thanks for the excellent newsletter! As an owner of a wood products company...I find your articles well written and timely. While our company is doing well, we need all the innovative ideas and help that we can find! Keep up the good work."

—Oregon furniture manufacturer



www.orforestdirectory.com



owic.oregonstate.edu/askexpert.php

Technical Assistance

OWIC faculty are involved with hundreds of technical assistance efforts each year. Technical assistance efforts vary from relatively straightforward answers to questions about common wood science and technology topics, such as wood drying, durability, and mechanical properties, to more involved projects, such as product testing or market assessments. Examples of projects and their outcomes this year include the following:

• MECHANICAL PROPERTIES TESTING—

OWIC faculty *Chris Knowles* and students *Kathryn Kamke* and *Jeff Vaughn* tested strength of black cottonwood for an Oregon firm. As a result, the company has experienced a ten-fold increase in sales of this species.

• PROTOTYPE TESTING—

OWIC faculty *Rakesh Gupta* and *Milo Clauson* and student *Kenny Martin* tested the seismic performance of a new wood wine rack design for an Oregon manufacturer of retail display fixtures. The company was interested in marketing racks with improved characteristics to Southern California retailers. The company is now using the results of the testing in their marketing literature.

• OTHER PROJECTS RELATED TO NEW PRODUCT/PROCESS DEVELOPMENT—

David Smith helped an Oregon composites mill diagnose a sensor problem on its new pollution control system; *Jeff Morrell* and *Scott Leavengood* assisted an East Coast company with location of a test site in Oregon for new wood preservatives; and *Kaichang Li* assisted a company developing new wood plastic composites.

• MARKET ASSESSMENTS—

OWIC faculty *Eric Hansen* helped connect an Oregon firm with student *Jane Han*. Jane assessed export

market opportunities for the company's product. As a result, the firm is now negotiating with international companies interested in purchasing their products.

• PRODUCT PERFORMANCE—

OWIC faculty helped dozens of Oregon firms to diagnose the causes and potential solutions for product performance problems. For example,

» *Scott Leavengood*, *Charles Brunner*, and student *Matt Peterson* assisted a manufacturer of cedar products with problems related to excessive shrinking/swelling and warp.

» *Scott Leavengood* helped a company producing polymer-infused wood products to determine the causes of excessive swelling in finished products.

» *John Nairn* assisted a door manufacturer with problems related to splitting in door panels.

» *Fred Kamke* assisted a door manufacturer with panel swelling problems in a fire-rated door.

» *Jeff Morrell* and *Connie Love* helped a company salvaging 'sinker' logs from the Columbia River to

assess causes of low preservative permeability

» *Fred Kamke* identified wood species of chips and sawdust for a composites manufacturer.

» *Matt Peterson* and *Chris Knowles* assessed the causes of warp in madrone flooring for a flooring installer.

» *Fred Kamke* assisted a hardwood plywood manufacturer with challenges related to resin bleed-through.

» *Lech Muszynski* analyzed adhesive bonds in laminated veneer lumber finger-joints for a laminated veneer lumber mill.

» *David Smith* and *Chris Knowles* developed an inventory management system for a decorative bark company.

» *Kaichang Li* assisted a company in troubleshooting problems with an adhesive.

» *Rakesh Gupta* developed formulas for estimating wind loads for a company developing a new utility pole design.



NEWOOD's MightyPine Shelving

OWIC faculty tested the seismic performance of this wood wine rack design.

Focus on the Future

In addition to our attention to short-term, problem-solving research, we have concentrated this year on longer-term efforts. The year began with the development of a strategic plan for OWIC and ended with the formation of the first Advisory Council for the Center. Both the strategic plan and the Advisory Council will guide the activities of OWIC for the next 5–10 years. Advisory Council members represent sawmills, particleboard, hardboard, and hardwood plywood manufacturers, entrepreneurs, consulting firms, and import/export brokers.

Throughout the year, we also have been involved with large-scale statewide efforts directed at charting the course for Oregon’s forest cluster to improve its overall competitiveness in the coming decades. In particular, OWIC faculty collaborated with the Oregon Department of Forestry, Oregon Economic & Community Development Department, and the Oregon Forest Resources Institute, with input from several private sector firms, to develop the *Oregon Forest Cluster Economic Development Strategy*.

The strategy is 3-pronged:

- federal forest restoration
- forest cluster vitality
- forestry workforce development

One outcome has been development of a comprehensive proposal, *Enhancing Innovation in the Oregon Forest Cluster*, submitted to the Oregon Innovation Council’s (Oregon InC) Established Industries Committee. Of the 17 proposals received by Oregon InC, five industry initiatives and industry Signature Research Centers were recommended for funding. The forest cluster initiative was the only new initiative to be included in Oregon InC’s 2009 *Oregon Innovation Plan 2.0*.

The forest cluster initiative includes activities related to enhancing innovation along the broad forest industry value chain:

• **SILVICULTURE**—developing and testing technologies to increase the productivity of managed forests. Technologies to be evaluated include those related to characterization of site potential, simulation software for tree growth modeling, use of airborne and ground-based LIDAR for rapid determination of stand inventory and timber quality, and smart-sensor systems for determination of wood quality during timber harvesting operations.

• **TRANSPORTATION**—improving efficiency to reduce the cost of moving materials. Specific activities in this area are related to

» **infrastructure improvement & management**—for example, the use of chemical stabilizers to extend surface rock life and development of decision support systems to identify more efficient road surface designs

» **fleet management**—such as evaluation of the current state of GPS usage and fleet management in the forest industry and collaborate with software firms to develop fleet monitoring and dispatch software

» **efficiency of biomass transport**—for example, developing decision support systems for use of intermediate processing and transfer yards; examining alternative truck and trailer configurations for biomass transport; evaluating methods for increasing loads using biomass compression technologies

» **commercialization and market research**—This element of the proposal will work towards building the “one-stop shop” for wood products entrepreneurs. Specific activities will include assessing market potential for new products/services; conducting user-focused research to allow potential customers to provide feedback to entrepreneurs; hands-on assistance in new product development and innovation management; and a grant program to help small firms develop and test product prototypes and other activities related to new product/service development.



The Wood-based Composites Group

Frederick Kamke

Kaichang Li

Rakesh Gupta

John Nairn

John Simonsen

Lech Muszynski

Keeping the Oregon Forest Industry Directory Up-to-Date

<http://www.orforestdirectory.com>

The Oregon Forest Industry Directory is our primary tool for connecting buyers and sellers in the state's forest industry. Visitors to the directory can search and find potential suppliers and customers. We also use the directory to help link people with Oregon firms. For example, we're often asked questions like, Which companies produce tanoak flooring?, Who buys alder logs?, How many sawmills are using pine in eastern Oregon?—and the list goes on. But we need your help to ensure we are providing up-to-date and accurate information. A directory is only as good as it is current!

Please visit the directory at <http://www.orforestdirectory.com> ASAP and have a look at your company's listing. You can follow the link to 'Companies' on the left-hand side and search alphabetically, or simply enter any part of your company name in the Search



box at the top left. If you have already registered, you can log in and update your listing.

If you have not yet registered, you can click on the link at the bottom of your

company page that says "Are you with this company? Request an account to edit this listing."

Questions or suggestions? Please call Scott at 541-737-4212.