



WASHINGTON STATE  
UNIVERSITY  
EXTENSION



## REVITALIZING THE FOREST PRODUCTS MANUFACTURING INDUSTRY

### BY THE NUMBERS

- More than 200 clients served in the forest products industry.
- More than \$10 million in industrial service center contracts.
- More than \$40 million in sponsored research products related to wood and wood plastic composites.
- 49 International Wood Composite Symposiums targeting industrial research and development in forest products hosted by WSU.
- More than 15% of the wood-plastic composites industry in North America uses formulations developed by WSU.
- More than \$3 million in direct expenditures for biofuel and bioenergy research and outreach.

### 2015

#### ISSUE

The need for employment and economic development in rural communities is a constant battle for many regions throughout Washington and the United States. This is especially true in timber-based regions where many communities have suffered from sawmill and other forest product mill closures due to a lagging economy and an increase in cheaper imported wood and wood composites. These economic influences deteriorate the entire forest industry supply chain, where logging, trucking, and mill jobs are significantly reduced or eliminated. The overall result is a dramatic deterioration of timber-based rural economies and forest health, where unmanaged forests can result in more damaging fires. To improve the economy of timber-based communities, new products and the revitalization of existing forest product markets need to be addressed.

#### RESPONSE

To assist the growth of a forest-based economy, the outreach and research efforts of WSU's Composite Materials and Engineering Center (CMEC) have focused on the wide variety of products that can be derived from wood and other natural fibers. CMEC works directly with the entire forest products supply chain to improve and assess the performance of many of their products through client-driven research, sponsored research projects, and outreach events such as workshops and symposiums that are related to the development of many forest-based products such as composites, fuel and energy, and timber structures. Some highlights of our recent efforts in various forest product industries are shown below:

- Wood plastic composites (WPCs)
  - Demonstration WPCs installed in a variety of test plots that include:
    - Decking, fendering systems, and wave screens for U.S. Naval bases in Rhode Island and California, and the Naval Academy in Maryland;
  - Bridge decking for a rails-to-trails project in Idaho and the U.S. Forest Service in Montana;
  - WPC Info Portal that provides relevant information for the WPC supply chain; and
  - Development of American Society for Testing and Materials standards and International Code Council Acceptance Criterion related to WPCs.



- Composite panels
  - Adoption of new products and processing methods throughout the forest products industry; and
  - Technology transfer to academia and industry through the International Wood Composites Symposium and other related symposia and workshops.
- Biofuels and energy
  - More than \$3 million in research and development expenditures for biofuels and co-products; and
  - Education of stakeholders within the biofuels and bioenergy supply chain.

## IMPACTS

As a result of our efforts assisting the forest products supply chain we have:

- Increased awareness of the state-of-the-art research and product development of forest products through our workshops, conferences, publications, and other media sources;
- Contributed to the workforce of the wood composite industry by training our students to be valuable and innovative employees through teaching, mentoring, and experience in applied and fundamental research; and
- Assisted industry in the development of many new products that are widely used in our everyday lives such as particleboard, medium-density fiberboard (MDF), oriented strand board (OSB), wood composite I-joists, and wood plastic composites.