

IPST Workshop Addresses Industry Challenges, Opportunities in 20 Years



The Institute of Paper Science and Technology (IPST) hosted a workshop last week at Georgia Tech to develop potential forest bioproducts industry scenarios for 2035 that consider constrained resources, changed production processes, new mill concepts, and a greatly expanded world population with different markets and market expectations. The scenarios will influence the upcoming research program at IPST, and serve as the starting point for the Institute's April Executive Conference. About 25 company, government

and affiliate representatives met to consider possible economic, cultural, and social drivers that could significantly impact industry opportunities 20 years into the future.

Scenarios developed at the workshop, entitled "A 20-Year Outlook for the Forest Bioproducts Industry: Implications, Challenges, Opportunities," were imagined for the purpose of identifying key cross-cutting areas of research that could prepare the industry for a changing world. The annual IPST conference April 18-19 will consider the implications for the industry and the resulting priorities for further exploration and research.

"Possible multiple product streams from mill sites, different concepts about mills in the future, and the future of raw materials were among the important factors discussed," said one participant. "The industry must prepare for a future with very different assumptions about the cultural environment."



John Mahaffie, Leading Futurists, presents global trends.



Sten Nilsson, Forest Sector Insights, presents industry trends.

At the workshop, Sten Nilsson, CEO of Forest Sector Insights, from Sweden, delved into the need for forest industry transformation, the obstacles impeding it, and the opportunities in accomplishing it. Agenda 2020 Technology Alliance President Ron Brown presented a review of dozens of existing forest products industry and business forecasts published by governments, business organizations, and NGOs.



Jennifer Jarratt, Leading Futurists

Ted Wegner, assistant director of the USDA Forest Service, Forest Products Lab, also presented an assessment of the future of forests and rangelands prepared under the 2010 Resource Planning Act. A Georgia Tech faculty panel introduced participants to technology-enabled opportunities ahead in several key fields.

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“This workshop was an invigorating endeavor that we believe may provide meaningful insight for our members who are looking for long-term asset utility,” said IPST director Norman Marsolan. “While no one can specifically predict markets in 2035, the workshop provided indicators of critical topics for research under many economic or business forecasts. At IPST and Georgia Tech, we are focusing our extensive capabilities to address these questions, which will be discussed at the April conference.”



*Gopal Goyal, (left) International Paper,
and Miles Drake, Weyerhaeuser*



*Ron Brown,
Agenda 2020
Technology
Alliance*

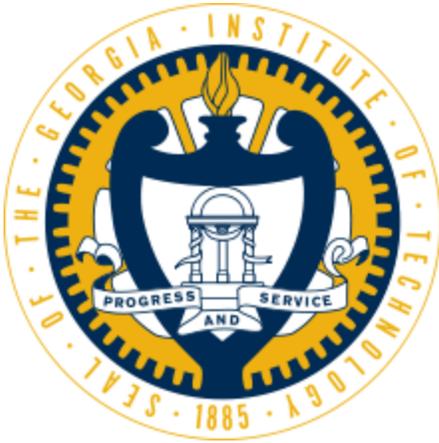


*Faculty panel: from left, Ken Stewart, host;
Andrei Fedorov, Mechanical Engineering;
Bernard Kippelen, Electrical and Computer Engineering;
Chip White, Industrial & Systems Engineering*



*Ted Wegner (left), USDA Forest Services, Forest Products Lab;
Mark Watkins, MWV; Norman Marsolan, IPST*

Marsolan to Serve on Georgia Tech Industry Task Force



A new industry task force has been assembled at Georgia Tech to develop best practices for enhancing and expanding the impact of commercial research at Georgia Tech. The task force will focus on actionable recommendations that will improve the approach to engaging industry in support of the Georgia Tech research enterprise and will ensure compatibility with and support to other important industry interactions across Georgia Tech.

IPST director Norman Marsolan will serve on the industry task force, which is co-chaired by Jilda Garton, vice president of research for the Georgia Tech Research Corporation, and Don McConnell, executive director for industry collaboration & commercialization.

“This effort follows our previous strategic initiative on strengthening industry-focused research and translational activities that reported out last spring, and an earlier strategic initiative on innovation,” said Stephen Cross, executive vice president for research. “Both have produced very positive results. An ad hoc committee also has been exploring how to strengthen strategic alliances with industry over the past two years.”

For more information, go to the Georgia Tech Office of Industry Engagement, www.industry.gatech.edu.

Georgia Tech Report Shows Georgia Forest Industry Statistics Up in 2011

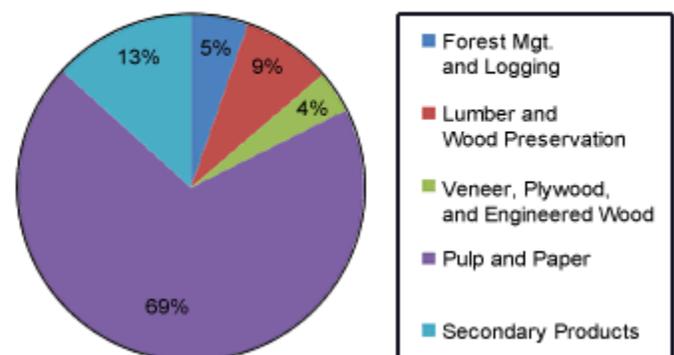


Forest industry employment rose in Georgia in 2011 - for the first time in four years - according to a report by Georgia Tech that was conducted for the Georgia Forestry Commission (GFC). The report, "Economic Benefits of the Forestry Industry in Georgia," showed that 46,378 workers were directly employed in forestry related jobs in 2011 — up 6.8% from the previous year. Robert Farris, director of the Georgia Forestry Commission, said recent surveys indicate the industry continued to grow last year. The report was issued January 2013.

The report by the Georgia Tech Enterprise Innovation Institute says

businesses that produce wood for lumber, paper and other products generated \$15.1 billion in revenues in 2011 and paid \$2.9 billion in wages and salaries. The forest industry also contributed \$487 million to Georgia's state budget. The pulp and paper segment continued to dominate all sectors within the forest products industry, representing 69% of total revenue output, 41% of employment and 55% of compensation. In 2011, revenue output was up 7.9%, employment was up 12.2% and compensation rose 15.9%.

Revenue sharing by forest industry sector in 2011 real dollars



Total 2011 economic impact to the state was just over \$25 billion, an increase of 5.6% over the previous year. For more information, go to the [GFC website](http://www.gfc.com).

Rededication Celebration to Commemorate 20 Years in Paper Tricentennial Building



An open house and rededication ceremonies on April 17, 2013, will mark the 20th year of the Institute of Paper Science and Technology (IPST) Paper Tricentennial Building on the Georgia Tech campus. A special 20-year IPST heritage exhibit also will be open to the public in the Robert C. Williams Papermaking Museum, which has been renovated recently.

Commemoration ceremonies and a dinner for invited guests will highlight the festivities. The rededication precedes the annual IPST Executive Conference, April 18-19.

Ragauskas on Team Investigating Lignin Conversion to Biodiesel Fuel



IPST Professor Art Ragauskas of Georgia Tech's School of Chemistry and Biochemistry has been named to a multi-university team conducting a two-year research project that is aimed at engineering a microbe to break lignin down into a lipid, or fat, and then into biodiesel. According to a recent article in Biodiesel magazine, the research has the potential to make cellulosic ethanol refineries more profitable, while providing new feedstock for biodiesel production growth. The \$2.4 million project recently awarded by the U.S. Department of Energy is headed by Joshua Yuan, a Texas A&M University AgriLife Research plant pathologist. The team includes scientists from Georgia Institute of Technology, University of British Columbia and Washington State University.

To see the entire Biodiesel article, go to this link: [Texas Researcher Looks into Biodiesel Production from Lignin.](#)

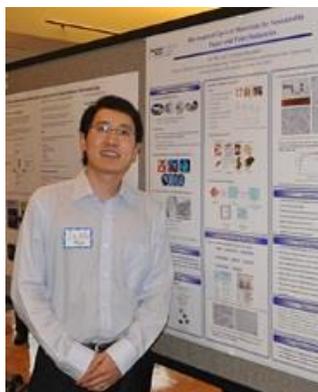
Three IPST Students Win Awards for Forest Bioeconomy Research



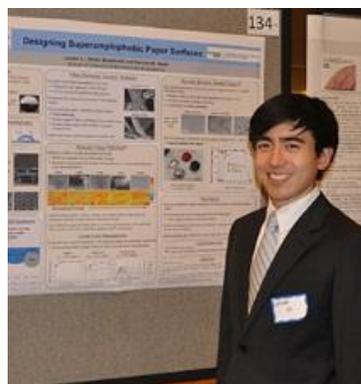
Left to right: Lester Li, Qining Sun and Jie Wu receive awards from IPST communications manager Steve Forsyth at the Georgia Tech Research and Innovation Conference.

IPST awarded three prizes totaling \$20,000 to students competing in the 2013 Georgia Tech Research and Innovation Conference (GTRIC) on Feb. 12. All three winning students are PhD candidates in the Georgia Tech Paper Science and Engineering graduate program. Qining Sun received the \$10,000 Institute of Paper Chemistry Foundation (IPCF) Award as a participant in the Innovation Competition. The IPCF Award is given to the top student in the Innovation Competition whose research project advances the horizons of the forest bioeconomy. His project is entitled, “Comparison of Changes in Cellulose Ultrastructure During Different Pretreatments of Poplar.” Qining’s advisor is Professor Art Ragauskas, Chemistry and Biochemistry. Further information about Qining and his research will appear soon on the IPST website.

Two George W. Mead Awards of \$5,000 each were presented to Lester Li and Jie Wu, for their entries in the GTRIC poster competition, which had more than 300 graduate student competitors this year. Lester and Jie were selected based on work that represents innovations in forest bioproducts research. Lester’s project is entitled, “Superoleophobic and Superhydrophobic Surfaces on Paper.” His advisor is Associate Professor Victor Breedveld, Chemical and Biomolecular Engineering. Jie’s project is entitled, “Chitin-based Bio-Inspired Optical Coating Materials for Sustainable Paper and Paint Industry.” His advisor is Associate Professor Carson Meredith, Chemical and Biomolecular Engineering.



Jie Wu



Lester Li

The object of IPST’s involvement in the competition is to stimulate innovations in forest bioproducts, including advances in manufacturing technologies. The topic areas include innovations in pulp and paper, biomaterials, biofuels and chemicals that advance the horizons of the forest bioeconomy.

“Congratulations to all three winners for their fine research toward advancing the forest bioeconomy,” said Norman Marsolan, IPST director. “We also thank the IPC Foundation and George Mead for providing funding to stimulate research that serves the goals of our industry and IPST.”

IPST Students Attend TAPPI-PIMA Student Summit

Four members of IPST's TAPPI student chapter attended the 2013 TAPPI-PIMA Student Summit, an annual event designed to provide students direct interaction with leaders in pulp, paper, packaging and allied industries. Attending were chapter president Fan Hu, Mikhail Levit, and chapter treasurer Qining Sun. The fourth IPST student, Tyrone Wells, presented a paper at the event Jan. 19-21 in Raleigh, N.C. IPST supports and sponsors the student chapter members attending the Student Summit, and provides membership support all year.



From left to right: Qining Sun, Tyrone Wells, Fan Hu and Mikhail Levit

The Student Summit is an excellent venue for undergraduate and graduate students to learn about opportunities after graduation as well as some of the key challenges and opportunities existing in the industry today. The Summit provides an opportunity to meet peers from other student chapters and universities from the U.S. and abroad while attending sessions focused on leadership, career development, and current industry topics and trends.

Alumni Welcome to Keep in Touch



IPST PhD Class of 2004

All alumni of the Institute of Paper Chemistry, Institute of Paper Science and Technology and Georgia Tech's Paper Science and Engineering program are invited to become members of the Paper Heritage Alumni Foundation. The alumni foundation's purpose is to serve alumni of the Institute of Paper Chemistry, the Institute of Paper Science and Technology, and IPST at Georgia Tech, by engaging former students in active and effective partnerships with the IPST community and the industry. Governed by alumni, for alumni, the Foundation promotes mutually beneficial interaction between alumni and the current student body and offers

the opportunity to build Institute friendships that will last a lifetime.

For further information, go to www.ipst.gatech.edu/alumni, or email <mailto:steve.forsyth@ipst.gatech.edu>.

Institute of Paper Science and Technology
500 10th St. NW
Atlanta GA 30332-0620

<http://www.ipst.gatech.edu>

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