



Forest biotechnology expert comes to UGA, Tsai working to expand tree biofuel technology

Athens, Ga, Aug. 5, 2008 – The University of Georgia’s bioenergy initiative has received a boost with the successful recruitment of forestry scientist Chung-Jui Tsai, who joins the Warnell School of Forestry and Natural Resources as the latest Georgia Research Alliance Eminent Scholar.

Tsai now holds the Winfred N. “Hank” Haynes Professorship in forest biotechnology. Her research will emphasize creating high-energy yielding trees for use in biofuel, she said, hopefully leading the industry toward using trees as a power source instead of ethanol from food crops.

“Biofuel will be a wonderful opportunity to revitalize the forest industry,” Tsai said, explaining that grain ethanol has had a detrimental impact on other consumer goods. “Food prices have gone crazy because of the grain ethanol—food prices and animal feed.”

A native of Taiwan, Tsai has a Ph.D. in forest science from Michigan Technological University, where she also taught for 11 years in the School of Forest Resources and Environmental Sciences. She was the director of the interdisciplinary Biotechnology Research Center at MTU from 2002 to 2007.

Tsai has published dozens of peer-reviewed articles and holds five patents that involve methods for modifying lignin, the key component that acts as glue in trees but also hinders efforts to extract the much-desired cellulose, which is vital to biofuel production.

Jeff Dean, a Warnell professor of forest biotechnology, noted that Tsai has established a respected program for the study of metabolic pathways leading to lignin and other phenolic compounds in woody plants.

“These molecules greatly impact our ability to efficiently utilize plant materials for the production of biomaterials and bioenergy,” Dean said. “Dr. Tsai’s expertise in this area is highly complementary to existing research programs in several departments and schools across the campus, and her addition to the faculty should serve to catalyze significant innovation as Georgia strives to become a leader in the field of biomass utilization.”

David Lee, vice president for research at UGA, and Michael Cassidy, president of the Georgia Research Alliance, believe that Tsai will strengthen Georgia’s emerging biofuels economy.

“Dr. Tsai’s recruitment strengthens an important dimension of our bioenergy initiative,” Lee said. “UGA is well positioned to discover sustainable and efficient approaches to biofuels production, and C.J. will be an important part of our team. Also, she has a history of making the latest biotechnology advances available to colleagues. We expect she will play a similar role at UGA.”

“Dr. Tsai’s expertise in developing trees as the feedstock for biofuels has enormous potential for making Georgia a leader in this critical area,” Cassidy said. “Her insight as a scientist and her

commitment to advancing the state's vital forestry industry exemplify what we seek in a GRA Eminent Scholar.”

Tsai's research will not stop at biofuel. She said her interests expand into other tree studies, such as how they defend themselves by using chemical compounds to ward off bugs and grazing animals. Determining how that works, she said, could lead to the creation of “smarter trees, which have great ecological implications because they interact with so many organisms.”

As part of its mission to leverage university research for economic development purposes, GRA provides the universities with funds to help recruit scientists, known as Eminent Scholars, whose research can yield economic benefit to the state. Tsai is UGA's 16th Eminent Scholar.

About the Georgia Research Alliance

A model public-private partnership between Georgia universities, business and state government, the Georgia Research Alliance helps build Georgia's technology-rich economy in three major ways: through attracting Eminent Scholars to Georgia's research universities; through helping create centers of research excellence and through converting research into products, services and jobs that drive the economy. To learn more about GRA, visit www.gra.org.

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