



Susan Sun

USDA Grants Fund Renewable Energy Research

Agriculture Secretary Tom Vilsack recently announced four projects totaling \$25 million for research and development of next-generation renewable energy and high-value biobased products from a variety of biomass sources. K-State grain scientists will work on two of those projects.

Xiuzhi “Susan” Sun, K-State university distinguished professor, will lead a \$5.08 million project to make the oilseed crop camelina a cost-effective biofuel and bioproduct feedstock.

Researchers at Montana State University and the University of Wyoming will look for ways to enhance camelina production by optimizing cropping systems within wheat-based crop rotations in Montana and Wyoming, where preliminary work has already been done, Sun said.

Once harvested and processed, Sun will develop new technologies to chemically convert camelina oil and meal to a variety of adhesives, coatings and composites, thus adding value to the coproduct.

She will work with K-State’s Donghai Wang, professor of biological and agricultural engineering, who will conduct fractionation and processing optimization research in collaboration with industries for commercialization potentials.

“The overall goal is to make oilseed camelina a cost-effective bioenergy and bio-based product feedstock,” said Sun.

Praveen Vadlani, the Gary and Betty Lortscher associate professor of renewable energy, will lead K-State’s efforts on a \$550,000 subcontract on a \$6.4 million grant awarded to Ceramatec in Salt Lake City, Utah.

Vadlani’s team will study biomass made from switchgrass and sorghum, both bioenergy-rich crops. His research will focus on pretreatment and fermentation steps in the production cycle to convert biomass into drop-in biodiesel, jet fuel, and bio-lubricants.

“Along with making advancements to biofuels and industry, I’m looking at this as an opportunity to mentor undergraduate students,” Vadlani said.

Award Recognizes Barkley’s Commitment to Students



Andrew Barkley has added another award to his long list of accomplishments. In November 2012, he received one of two \$5,000 Dr. Ron and Rae Iman Outstanding Faculty awards sponsored by the K-State Alumni Association and the Imans.

Professor Barkley teaches courses in agricultural economics and public policy.

“Dr. Barkley has earned an international reputation for his commitment to students, to colleagues both within the university and around the world, and to the people of Kansas,” said his nominator, David Lambert, professor and head of the Department of Agricultural Economics.

“The strength of K-State’s teaching program is bolstered by the strong research focus of our faculty,” Lambert said. “Andy has been successful in establishing strong research programs. His accomplishments and continuing thoughtfulness in helping define tomorrow’s issues and educational needs are vital for shaping the future of this department and the university.”

Barkley joined the K-State faculty in 1988 and has received numerous university and professional teaching awards, including the CASE Kansas Professor of the Year in 1993, the university’s Presidential Award for Excellence in Undergraduate Teaching Award in 1997, and the Distinguished Scholar Award from the Western Agricultural Economics Association in 2008.



Aim high, love learning, and be innovative

Professor Candice Shoemaker examines plants in the greenhouse with graduate students, from left, Anna Shinjo, Paula Suda, and Angela Anegon.

It's official. Kansas State University Ranks No. 1 in Association of Public and Land-grant Universities (APLU) teaching awards. K-State has received 13 Excellence in College and University Teaching in the Food and Agricultural Sciences awards, more than any other university.

Each year, the APLU selects two national, six regional, and two new teacher award winners. In 2012, Candice Shoemaker, professor of horticulture and human health, earned a national award, and Dan Thomson, the Jones professor of production medicine, received a regional award.

The awards recognize outstanding faculty members for their ability as classroom teachers, use of innovative teaching methods, service to students and their profession, and scholarship.

Shoemaker (MS '82 horticulture) helped develop K-State's award-winning graduate certificate in horticultural therapy in 2008 and also led the development of the urban food systems specialization within the horticulture master's program.

Since joining the faculty in 2001, Shoemaker has taught many courses at the undergraduate and graduate

level and has high expectations for her students.

"My teaching philosophy is based on the premises to aim high, love learning, and be innovative," she said. "I believe learning is a lifelong process, and I strive to facilitate development of the skills in my students that will allow them to be successful lifelong learners."

Shoemaker's graduate students agree that she deserves the recognition.

"Dr. Shoemaker has a knack for instilling curiosity and a passion for learning in her students," said Angela Anegon.

"She patiently advised me through figuring out my own research interests and how to develop those interests into a career," added Paula Suda.

Anna Shinjo came to K-State from Japan to work with Shoemaker.

"I am very thankful to be a research assistant under Dr. Shoemaker," said Shinjo. "She is supportive, cheerful, and very open to foreign cultures. We are working on a comparative study about the current conditions of horticultural therapy in the United States, Korea, and Japan. Without Dr. Shoemaker — who has a really good alliance with researchers in these countries — I

do not think I could bring up this international-wide topic for my research.

"Through our work, I can see her strong passion to explore the relationship between horticulture and human health. It will be truly helpful when I go back to Japan after graduation."

Dan Thomson earned the regional APLU award. He teaches courses in feedlot production medicine, animal welfare, and clinical nutrition in the College of Veterinary Medicine.

"My philosophy is to motivate and transfer usable knowledge to students so they will walk out of my classroom wanting to continually learn new ways to improve animal well-being, food safety, and animal health," he said.

In addition to his teaching duties, Thomson is director of K-State's Beef Cattle Institute, which provides education, research, and outreach to beef producers.

The awards are sponsored by the APLU, U.S. Department of Agriculture, and the American Association of State Colleges and Universities. Shoemaker earned a \$5,000 stipend, and Thomson received \$2,000 to support their instructional programs.

Printing Merger Leads Way to Environmental Benefits, Zero Hazardous Waste

University Printing has instituted a new printing process that is better for the environment. By using new computer-to-plate equipment, changing

chemicals, and merging printing facilities, print jobs done on the K-State Manhattan campus now produce no hazardous waste.

The change was initiated by Rob Nixon, assistant director for University Printing in the Department of Communications and Agricultural Education.

He saw the merger of K-State Printing Services — previously located near Manhattan Regional Airport and in the K-State Student Union — and the department's Duplicating Center as an opportunity to lessen the use of harmful chemicals.

Nixon, who has served as the department safety officer since 1995, praised the entire University Printing staff for working together to research chemicals and processes to make the necessary changes.

"We still have some waste but no hazardous waste, and we recycle paper, cardboard, and pallets," Nixon said.

The merger process began in July 2010; however, equipment and

personnel from the off-campus facility were not physically united until September 2012. University Printing is now located in Dole and Umberger halls, with a copy center in the Union.

New technology has limited the need for some chemicals, but chemicals are still needed to clean the presses and maintain shop equipment.

"University Printing did 1,267 jobs on our printing presses last year," Nixon said. "That includes university, athletics, and college promotional materials; envelopes, letterheads, and business cards; calendars; newsletters, including many for K-State Research and Extension offices around the state; pocket portfolios; and materials for the sesquicentennial and commencements."

Nixon credits Greg LeValley, University Printing director; Mitch Ricketts, safety coordinator for K-State Research and Extension; Kelly Green, campus hazardous waste manager; and Steve Galitzer, director of public safety, for their help in making the transition to a cleaner process.



K-State Research and Extension

Rob Nixon, left, assistant director, and Rex Jones, print shop supervisor, examine a print job fresh off the press.

New Videos Explain the Importance, Methods for Preserving the Tallgrass Prairie



and why it's important to preserve this national treasure. Less than 4 percent of the original tallgrass prairie remains in the United States, and most of it is in Kansas."

"Preserving the Tallgrass Prairie" will air on Kansas City Public Television on April 14.

The second video, "Keeping Fire in the Toolbox," is 17 minutes

long and addresses a rural audience. It emphasizes the smoke management website (www.ksfire.org) with links to various tools and resources.

To get a broad perspective on the issues of preservation, burning, and smoke management, Pryor talked to individuals in addition to local, state, and federal agencies.

"I interviewed ranchers; the Nature Conservancy; Kansas Department of Wildlife, Parks, and Tourism; National

Weather Service; Kansas Department of Health and Environment; Johnson County Park and Recreation District; Johnson County Department of Health and Environment; Mid-America Regional Council; Children's Mercy Hospital; Missouri Department of Conservation; EPA Region 7; Kansas Rural Center; the U.S. Fish and Wildlife Service; Farm Service Agency; and Citizen's State Bank," Pryor said.

Carol Blocksome, research assistant professor in the Department of Agronomy, and Mike Holder, Flint Hills Extension District agriculture and natural resources agent, are credited as video producers. The project is funded by a grant from the Sustainable Agriculture Research and Education program.

Watch these videos and many more on the K-State Research and Extension YouTube channel www.youtube.com/user/KSREVIDEOS.