

September 2018



### Kansas State University again tops Money Magazine's annual ranking of best college values in state

For the third year in a row, <u>Money Magazine</u> is recognizing Kansas State University as the top university value in Kansas. The ranking is the second in recent months that highlights the university's position as the best educational investment in the state.

Quality of education, affordability and various student outcome factors are used to determine the magazine's best colleges, with Kansas State University taking the top spot among the schools in Kansas that met Money's ranking criteria. Among the areas where the university leads in Kansas is the average starting salary of new graduates. The \$50,000 average for a new alumnus of K-State is \$500 higher than that for new graduates of the second-place school on the magazine's State List, the University of Kansas.

In May, <u>SmartAsset</u>, a financial services company, rated K-State as the state's best education value for the fourth year in a row.

"As the new provost of Kansas State University, these strong national rankings show me that this university's academic programs are among its many strengths," said Charles Taber. "When our new graduates are commanding the highest average starting salary in the state, it shows they are in demand and are graduating with the education and skills that employers seek. I look forward to doing all I can to help K-State continue as the best educational value in the state and to help further build its brand as a national educational value."

The No. 1 choice of Kansas high school graduates, K-State's most recent <u>post-graduation survey</u> shows a 95percent placement rate in students securing a job or continuing their education. The university, which offers more than 250 majors and options, makes affordability a priority, awarding more than \$248 million in student aid last year, including more than \$38 million in scholarships.

## K-State researchers receive over \$30.7 million in federal grants

Below is a list of grants we would like to highlight that have been received by K-State researchers since August 1, 2018:

• **\$21.9 million for efforts to help end hunger, poverty** - Officials from the U.S. Agency for International Development (USAID) announced they have awarded \$21.9 million to Kansas State University to continue funding three research labs that work to end global hunger and poverty.

In 2013, USAID awarded three "innovation labs" to K-State through the Feed the Future initiative, which is the U.S. government's effort to end global hunger. K-State won the awards through a competitive process against programs across the United States.

The three labs are: <u>The Feed the Future Innovation Lab for Sorghum and Millet</u> (SMIL); <u>The Feed the</u> <u>Future Innovation Lab for the Reduction of Post-Harvest Loss</u> (PHL); <u>The Feed the Future Innovation Lab</u> <u>for Applied Wheat Genomics</u>.

Each of those projects had an initial five-year award. USAID is now adding \$14 million over five years for SMIL, \$3 million over three years for PHL, and \$4.9 million for five years to wheat genomics.

 \$4 million to accelerate crop breeding - Boosting crop yields to feed a growing world population expected to double by 2050 is the aim of newly funded multidisciplinary research led by K-State. The goal is to develop ways to improve crop yields, crop breeding programs and in-field management.

The project, "Building Field-based Ecophysiological Genome-to-Phenome Prediction," will use wheat as an example crop. Wheat accounts for 20-percent of the world's calories and nourishment. The researchers will build a new computer model for wheat that combines crop physiology and genetics plus state-of-the-art field monitoring technologies. Instead of inferring soil profile data, canopy temperatures, development phases and so on, the model will use actual measurements enabled by new technology to predict how different wheat varieties will perform in different environments.

• **\$2.4 million to improve methods for plant tissue culture for genome engineering** - The National Science Foundation grant is to understand the genetic basis underlying the ability of plant tissues to regenerate into whole plants, a process which is critical for plant genome engineering.

Maize, or corn, the highest-yielding cereal crop in the world, serves as an important model for fundamental research. Maize production has experienced dramatic yield increases over the last century but faces challenges for further increases, particularly under highly variable climates and disease pressures.

 \$1.6 million to fund first cohort of NBAF Scientist Training Program fellowships - Five graduate students from the College of Veterinary Medicine have been awarded <u>National Bio and Agro-defense</u> <u>Facility (NBAF) Scientist Training Program fellowships</u>.

Fellowship awardees were selected for their strong interest and expertise in emerging animal diseases, diseases that infect both animals and people, or foreign animal diseases that threaten global health and food security. Once they complete the fellowship program, they are committed to working at the Foreign Animal Disease Diagnostic Laboratory at the Plum Island Animal Disease Center in New York and, ultimately, the NBAF, which is under construction adjacent to the university's Manhattan campus. The selected students have already received training in high-containment facilities that work with pathogens that will be studied at NBAF.

\$542,060 to study population changes in Kansas birds - Iconic grassland bird species are in steep
decline. But studying dickcissels, eastern meadowlarks and grasshopper sparrows is complicated by the
fact that they move - a lot. And why they move and how that movement affects their populations is not well
understood. This project will identify the key reasons behind population changes in highly mobile species.

The grassland environment is complex, so understanding dramatic differences in abundance of animals from year to year requires charting differences in and species responses to rainfall variability, grassland management practices such as burning and grazing, and changes in prey and predator communities. Researchers have a head start on gathering data thanks to the <u>Konza Prairie Biological Station</u>, an 8,600-acre native tallgrass prairie research area jointly owned by K-State and The Nature Conservancy.

 \$304,427 to study clean water from wastewater - A three-year grant from the National Science Foundation Environmental Engineering Program will work to improve a wastewater cleaning process.

Anaerobic membrane bioreactors are an emerging green technology for generating clean water for reuse from municipal and agro-industrial wastewaters while also producing methane gas to achieve an energyneutral operation. However, the bioreactors are limited by several factors, most prominent of which is the formation of biofilms on membranes within the reactor. This limits treatment capacity, adds to operation costs and ultimately makes a full-scale anaerobic membrane bioreactor operation unfeasible. This study seeks to gain a better understanding of how these biofilms form over the membrane surfaces.



#### K-State and Schlumberger sign three-year agreement valued at \$54 million

Imagine viewing the Earth 300 million years in the past. Today, that observation would put you two miles under the surface of the planet.



'Moo've over, yogurt; K-State students win first place in Dairy Council's New Product Competition for 'quarky' drink

Thanks to an agreement with Schlumberger - a worldwide provider of technology for reservoir characterization, drilling, production, and processing to the oil and gas industry - Kansas State University researchers in the <u>geology department</u> now have access to a suite of powerful tools to help them delve deeply into the past, when petroleum reserves were formed. The three-year agreement is valued at \$18 million per year and provides the university access to the Peterl\* E&P software and Techlog\* wellbore software platforms; PetroMod\* petroleum systems modeling software; and GeoX exploration risk, resource and value assessment software.

Matt Totten and Abdelmoneam Faef, associate professors of geology, said these tools will help the university address petroleum production problems in Kansas.

"Kansas has produced petroleum for a long time," Totten said. "We're still No. 8 in the country. But there have never been adequate models to describe the system - the environment in which the rocks, or reservoirs, were formed, how they were buried and the rate at which they were buried, and all of this influences production," Totten said. A new creamy protein-rich dairy drink has Kansas State University success written all over it.

Three K-State food science graduate students were awarded first place and \$8,000 in the National Diary Council's annual New Product Competition for Quick-Quark, a new drinkable dairy snack based on the German-style quark cheese.

The students - working in the university's Food Science Institute - mixed whole milk, cream, milk protein concentrate and sweetened condensed milk, then fermented the ingredients with live cultures to produce a mildly tart quark base with 30 percent daily value of calcium and 10 percent daily value of vitamin D. The product has 14 grams of protein in a 150-gram serving, which is almost double the amount of popular Greek yogurt drinks and more than double the number of popular yogurts targeted toward children.

In a resealable pouch with a 30-day shelf life, Quick-Quark combines natural dairy ingredients with live cultures, which help aid digestion. using real fruit, the students developed two different flavors: pina colada and acai blueberry, which has a distinct Kansas State University purple color.



# K-State College of Agriculture magazine now online

The fall 2018 AgReport has been <u>posted</u>. This issue introduces J. Ernest "Ernie" Minton, interim dean of the College of Agriculture and interim director of K-State Research and Extension; highlights technology advances for producers; student research experience that leads to careers; how our statewide network reaches all Kansans; weed control through fall burning; benefits of campus visits; recognition for students, faculty and alumni.

We would appreciate your comments.

#### **DID YOU KNOW?**

The Princeton Review recently ranked K-State No. 4 for best quality of life.

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K-State Government Relations Staff <u>Sue Peterson</u>, Chief Government Relations Officer <u>Kristin Holt</u>, Government Relations Coordinator <u>Sam Pittman</u>, Legislative Assistant Contact Information Office of Government Relations 110 Anderson Hall, Manhattan, KS 66506 785-532-6227 www.ksu.edu/govrelations