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KANSAS STATE UNIVERSITY | Office of Governmental Relations

Benjamin Wolfe to lead K-State Olathe as CEO and dean

Following a national search, Benjamin Wolfe will become the next CEO and dean of Kansas State University Olathe. Wolfe currently serves as associate dean of the School of Professional Studies at the University of Kansas and of the KU Edwards Campus in Overland Park.

Wolfe's appointment was made by Charles Taber, K-State executive vice president and provost. He will start his new position on June 12.

"Benjamin Wolfe possesses the knowledge and experience of the academic and workforce development needs of the Kansas City region, which will be key in his new job as CEO and dean of K-State Olathe," Taber said. "He will serve as an advisor to both President Linton and myself on establishing both strategic directions and significant initiatives in research and education in the Kansas City region by the university."

Wolfe also will work with university and regional stakeholders to maintain a strategic focus for K-State Olathe consistent with the strategic directions of the university and to build continued excellence and growth in education, research and outreach programs offered through the Olathe campus. As chief administrative officer of the campus, Wolfe will be responsible for overall program leadership, strategic direction, fiscal stewardship, fund development, policy formulation, impact assessment and aligning the efforts and strengths of K-State Olathe with the university's.

"Building on the great work already taking place at the campus, K-State Olathe is poised to be the workforce development leader in Kansas City," Wolfe said. "I am excited to help align the current and new education and research opportunities of K-State Olathe and the Kansas City metro with the strategic vision of President Linton and Provost Taber."

Before becoming associate dean, Wolfe served as KU Edwards Campus' director of faculty and administration and as director of academic and faculty support. He also has worked at Metropolitan Community College-Kansas City, where he served as director of the college's Title III grant program and was chair of the natural and social sciences department and was a member of the geology/geography faculty at the college's Blue River Campus in Independence, Missouri.

Two K-State faculty in the Carl R. Ice College of Engineering receive prestigious NSF CAREER awards

Inventing field-effect transistors that achieve high-performance signals with ultra-low electronic noise and laying the foundation for emerging biosensor technologies is the research focus of Suprem Das, Jeffrey and Joy Lessman Keystone research scholar and assistant professor in the industrial and manufacturing systems engineering department, who has received a $500,000 Faculty Early Career Development, or CAREER, award from the National Science Foundation.

Das is investigating the science and technology of atomically thin materials and their nano-engineered structure, including field-effect transistors, a fundamental building block of future bioelectronics. A field-effect transistor uses an electric field to control the flow of current in a semiconductor.

The project, "CAREER: Rational Design of One-Dimensional Contacts to Two-Dimensional Atomically Thin Heterostructure for High-Performance and Low Noise Field-Effect Transistors and Biosensors," aims to study field-effect transistors with two-dimensional atomically thin materials with unique one-dimensional metal contacts designed with high-performance and low-noise characteristics.

Das is investigating the use of graphene, hexagonal boron nitride and transition metal di-chalcogenides to form atomically thin field-effect transistors.

"Given their unprecedented physics and chemistry at the atomic level, these devices will revolutionize their use in electronics, communication and cyber systems, as well as in health care and environmental sensing," Das said.

Additionally, the project will train diverse graduate and undergraduate students in micro-nanoscale science and engineering, while the results from this project will be integrated in interdisciplinary educational activities at K-State.

The second award recipient, Jeongdae Im, seeks to better understand and quantify emissions of nitrous oxide, a potent greenhouse gas, from agricultural forage conservation with a more than $600,000 CAREER award.

Jeongdae Im, Jeffrey and Joy Lessman Keystone research scholar and assistant professor of civil engineering, is investigating the nitrous oxide emissions from forage conservation, which is the practice of stockpiling plants or parts of plants that serve as food for livestock. This process often relies on fermentation, as the lactic acid produced works as a natural preservative for forage crops. But microorganisms that produce greenhouse gases also thrive in this environment.

The project, "CAREER Mechanisms and control of nitrous oxide emissions from forage conservation," aims to provide a understanding of the conserved forage biome and open up a new avenue toward eco-friendly forage management and a sustainable cattle industry.

"Current nitrous oxide emission inventories from agriculture only track emissions from soil management, manure management and field burning of agricultural residues," Im said. "This project will focus on nitrous oxide emissions from forage conservations as an abundant and yet unaccounted source of this greenhouse gas from agriculture and farming."

Im will carry out an integrated laboratory and field research program to quantify nitrous oxide emissions in forage conservations while also investigating the microbial processes that control such emissions. His prior research has already identified a potential solution to this issue which reduces nitrous oxide emissions by 95%. Im has filed a provisional patent and is collaborating with Corteva AgriScience to develop a novel inoculant.

Natarajan leads K-State portion of $24 million NSF investment in resilient, socially equitable infrastructure

Ensuring that infrastructure is equipped to support all communities after a disaster, including historically underserved groups that often receive less aid in the

Wildcat Wind Power notches first-ever win at DOE's Collegiate Wind Competition

For the first time in club history, K-State's Wildcat Wind Power team won at the 2022 Collegiate Wind Competition, a U.S. Department of Energy event.

The K-State team battled 11 other schools to claim

aftermath, is the aim of a new five-year, $24 million statewide initiative funded by the National Science Foundation (NSF).

Kansas State University joins a collaborative group of 16 other universities and colleges in Kansas, along with industry leaders and disaster experts, for the project, which is designed to better equip communities with limited resources before and after a natural disaster strikes. The project is titled "Adaptive and Resilient Infrastructures Driven by Social Equity."

Bala Natarajan, Steve Hsu Keystone research scholar and Clair N. Palmer and Sara M. Palmer electrical engineering professor in the Mike Wiegers Department of Electrical and Computer Engineering, will lead K-State's portion of the project.

"I find that the most challenging societal problems typically require solutions that cut across disciplinary boundaries," Natarajan said. "That is why I am excited to work on this unique project, as it will bring together a diverse team of researchers from across Kansas to help create a paradigm shift in resilience science and engineering."

Funded through the NSF's Established Program to Stimulate Competitive Research RII Track-1 program, the project's overall goal is to determine how infrastructure resilience intersects with social equity and how human capacity, physical infrastructure and policy levers can be designed to achieve socially equitable outcomes that collectively improve decisions and community resilience. The NSF will provide $20 million, with the state of Kansas adding $4 million in matching funds.

Belinda Sturm at the University of Kansas will serve as principal investigator on the project, leading the group of 23 researchers from Kansas State University, the University of Kansas and Wichita State University.

"The team will leverage fundamental advances and tools from social sciences, engineering and computer sciences to develop a new social equity-driven paradigm that will transform the way researchers and communities approach smart and resilient communities," Natarajan said. "Working closely with multiple stakeholders, we are looking forward to translating our theoretical modeling and analysis work into a meaningful decision support framework that Kansas communities can use in their policymaking, planning and operation of critical infrastructures."

Targeting underserved populations, the project will introduce more than 2,400 Kansas families to resilience, resulting in an understanding of individual capacity and preparedness for disasters while providing pipelines to higher education.

DID YOU KNOW?

There are over 4,000 trees on K-State's Manhattan Campus including oaks, redbuds, cottonwoods, pines, magnolias and others. K-State has a nature walk with information on many of the trees planted across campus.

the top prize in the yearlong national competition. The team designed, built and tested its model wind turbines throughout the academic year before presenting and testing the models in a wind tunnel at the event, which was in conjunction with the American Clean Power Association's CLEANPOWER 2022 conference and exhibition.

The competition is divided into four contests that test the skills of the team on its ability to create a viable model, along with rating the team's design and presentation skills, its ability to design an offshore wind farm and its effectiveness in wind-related outreach.

K-State placed in the top half of each contest, winning in turbine testing, taking second in turbine prototype, fourth in connection creation and fifth in project development to finish with the highest overall score.

Collaborative virtual fencing research study aims to advance conservation, ranching outcomes

Imagine cattle ranching without traditional fencing and the costly, time-consuming fencing repairs. Two ecologists at K-State are working to make that vision a reality while benefiting streams and birds. It's part of a multi-partner research project using virtual electronic cattle fencing in the Flint Hills of Kansas.

Virtual fencing is accomplished through special cattle collars and advanced GPS tracking that can be used to create exclusion areas or to move cattle without the need for physical fence lines.

The Nature Conservancy is partnering with Kansas State University, National Park Service, Kansas Grazing Lands Coalition and private producers to determine if virtual fencing can help managers improve conservation, business and soil carbon outcomes on working cattle ranches in the U.S.

This work by K-State is part of a $2 million project at three sites that is also assessing how soil carbon and ranching outcomes may be improved with innovative management options made possible by virtual fencing. Additional project sites are located in Colorado and New Mexico.

The Flint Hills is home to some of the last remaining tallgrass prairie in the U.S. During the five-year study, K-State researchers are seeking to understand how grazing practices created by virtual fencing affect vegetation, watersheds and grassland birds on the Tallgrass Prairie National Preserve and the neighboring Mushrush Red Angus ranch.

Cattle grazing mimics the original grazing of bison, which is an important part of the prairie ecosystem. Grazing helps to create the habitat patches tallgrass birds need and is also a land management tool. This project will help uncover potential new conservation and land management practices by precisely controlling cattle movement, according to researchers.

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