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Seek: research magazine for Kansas State University. [Introductory matter] Spring 2019

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Dorhout: Seek: research magazine for Kansas State University. [Introducer

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RESEARCH MAGAZINE FOR KANSAS STATE UNIVERSITY

SPRING • 2019

A solid defense

Research tackles military challenges from every angle

CRISPR connections

Genetic technology that improves our world

Keeping Kansas beef on track

CattleTrace project safeguards state's industry





Healing art

Arobelle Andrews, veteran and artist teacher for The Earl Project, created this artistic collage using photographs, health care documents, embroidery and digital printing on cloth to express her post-traumatic stress disorder experience with her veteran husband Victor Andrews.

The Earl Project is a Kansas State University-led community project with veterans and soldiers. The project promotes wellness and creativity through burn-out art workshops, in which participants use fire, collage, photocopy and bleach on fabric to tell their story. Veterans and soldiers use burn-out techniques with mending stitches as both metaphor and realization of healing in a physical manifestation to transform their lived experience into art. Participants take their work home and also contribute to a community cloth scroll inspired by the Bayeux Tapestry.

Geraldine Craig, professor of art, founded The Earl Project in honor of her uncle Earl, a World War II post-traumatic stress disorder survivor and 1939 K-State graduate. See page 20 to read about other ways that K-State is helping veterans and soldiers.

The Earl Project is funded by the Mid-America Arts Alliance, the National Endowment for the Arts and the state arts agencies of Arkansas, Kansas, Missouri, Nebraska, Oklahoma and Texas. Additional funding is provided by a Kansas State University Small Research Grant and the university's art department. Project partners include the university's Institute for the Health and Security of Military Families and the Marianna Kistler Beach Museum of Art as well as the Manhattan Arts Center and the Mingenback Art Center at Bethany College.

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About Seek

Seek is Kansas State University's flagship research magazine and invites readers to "See" K-State's research, scholarly and creative activities, and discoveries. Seek is produced by the Office of the Vice President for Research and the Division of Communications and Marketing.

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As individuals and as a society, we strive for many types of security: financial security, food security, national security and health security are just a few. This issue of *Seek* illustrates how research at Kansas State University addresses security in all of these areas — and pushes the boundaries of what we will be able to achieve in the future.

Our feature story on page 20 highlights how funding from the U.S. Department of Defense is helping K-State researchers in biology, computer science and political science attack military challenges, from treating post-trauma inflammation or developing cyber-resilient embedded systems to understanding the causes of skin cancer and the effects of troop deployments on attitudes toward the U.S. We are proud of our contributions to protecting national security and the health of our military personnel.

Financial security and health security are foremost concerns for most of us. On page 16, read how K-State research helps us understand how finances affect relationships — and vice versa — at both our kitchen tables and international trade negotiation conference tables. On page 34, read how our Center on Aging PEAK program is helping Kansas families care for their loved ones in assisted living and nursing homes.

Biodefense, global food systems and food security are highly entwined, and they are special areas of expertise at K-State. The story on page 28 focuses on the CattleTrace project, which aims to protect the \$17 billion cattle industry in Kansas by developing a system that would help track suspected animal diseases and, should the unimaginable occur, reduce response time to an outbreak. This project is likely to become a model for the rest of the country as it brings all segments of the industry together to solve a problem, to ensure data accuracy and privacy, and ultimately to help market U.S. beef overseas. Read how K-State wheat breeders, biochemists and animal disease experts are applying cutting-edge gene-editing technology to their work on page 10. They are speeding up important processes and giving us glimpses of a more secure future. Our features on a distinguished professor of soil science on page 36 and recipients of National Bio and Agro-defense Facility Scientist Training Program fellowships on page 38 provide further evidence of K-State's vital role in protecting food security and human health through our tripartite mission of teaching, research and service to the state and our nation.

Research at K-State harkens back to our land-grant roots, and our first problem-solving and training in "agriculture and the mechanic arts." Our talented faculty, students and staff are always looking for new ways to secure our future, and as they advance our tools and techniques, we advance the efforts to build a safer, more secure future for our families. After reading this latest issue of *Seek*, I hope you will be sleeping more soundly at night.

Peter K. Dorhout, Vice President for Research