

WSU News

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Convergence Sciences researchers focus on solving complex societal problems

By Strategic Communications

- Four Wichita State University research teams were awarded \$300,000 each as part of the Convergence Science Initiatives.
- The Convergence Science Research Initiative brings together a range of academic disciplines to solve complex problems focused on society needs.
- Each of the funded projects will engage undergraduates, graduate students and the community in research.

Wichita State University has announced the inaugural awardees of the highly competitive President's Convergence Sciences Research Initiative.

The initiative, which was launched by university President Jay Golden, is an effort to bring together the intellectual curiosity and strengths of faculty and students from a range of disciplines and give them the support to develop research programs that drive the diversity and growth of the Kansas economy while addressing global challenges.

As defined by the National Science Foundation, convergence research is a means of solving vexing research problems — in particular, complex problems focusing on societal needs. It entails integrating knowledge, methods, and expertise from different disciplines and forming novel frameworks to catalyze scientific discovery and innovation.

The four convergence science research programs competition winners announced at Wichita State are:

- **The Smart Fusion Material Research Institute** will be developing novel computational, material and digital manufacturing approaches to unlock the complex interactions among material, microstructure, processing and mechanical properties involved in additive manufacturing.
- [The Disaster Resilience Analytics Center](#) will leverage the university's expertise in artificial intelligence, deep learning and multiple modes of big data to better predict natural and human-

made disasters and improve preparedness by creating a new generation of digital platforms and support services.

- [The Institute for Health Disparities](#) will generate new methods to reduce obesity among vulnerable populations and improve health literacy as a mechanism among health care providers for behavior change.
- [The Center for Educational Technologies to Assist Refugee Learners](#) will focus on designing innovative solutions to meet the educational needs to the children of the more than 70 million forcibly displaced refugees worldwide. As a result, it will also create innovative pathways and software for educational access to those in our state and nation.

In addition to their research focus, the faculty comprising each center or institute will also be working to develop new academic programs and engaging undergraduate and graduate students across the university.

The university will invest \$1.2 million — or \$300,000 each— over a period of three years to initiate these efforts, which are designed to be self-sustaining through federal and private research grants that will also fund student financial support — a priority of the university.

The solicitation of projects, led by Dean Andrew Hippisley from the Fairmount College of Liberal Arts and Sciences and the Faculty Senate, brings together more than 45 existing faculty members in 20 select fields across campus to enhance the breadth and depth of the university's solution-driven research and innovation focus. Each of the new programs include partners from the other Kansas Board of Regents schools, such as the University of Kansas and Kansas State University.

"These new centers and institutes will also be partnering with existing businesses and government agencies including our Innovation Campus partners in new and novel ways that benefit our students and researchers while supporting the competitiveness of the businesses and communities in our region," Golden said.

Golden added: "The convergence sciences program is essential to accomplishing our priorities of providing cutting-edge applied learning experiences for our students by exposing them to an innovative, interdisciplinary culture while also advancing our focus on scholarship, research and innovation that benefits our economy and the people and communities that call Kansas home."