TWO LU NURSING PROFESSORS EARN STATE RESEARCH AWARD

JoAnne Gay Dishman School of Nursing Associate Professor and Department Chair, Dr. Cynthia Stinson, and Director of Graduate Nursing Studies, Dr. Ruthie Robinson, were selected by the Texas Organization of Baccalaureate and Graduate Nursing Education (TOBGNE) to receive one of the organizations most prestigious awards in the state.

The two were named the 2022 recipients of the State Research Award by the TOBGNE for their research focusing on “Compassion Fatigue and Resiliency During the COVID-19 Pandemic”.

The TOBGNE seeks to promote the health of Texas through excellence in nursing education, provide access to educational opportunities and expand the integrity and harmony of spirit of the profession. The organization’s goal is to enhance the preparation of entry-level and advanced practice nurses in Texas through the promotion of collaborative and facilitative relationships among other Texas institutions of higher learning. The State Research Award is awarded to one institution among all schools of nursing in the state of Texas.

“It is an honor to be recognized for our research, especially among our peers within our discipline,” Stinson said. “Compassion fatigue is a big problem in the nursing field, and this means that more educators are recognizing that.”

According to the duo’s research findings, between January 21, 2020, and October 20, 2021, there have been 44,979,605 positive cases of COVID-19 and 726,206 deaths in the United States. As the pandemic continues and patient hospitalizations surge, nurses are left on the front lines of health care faced with scenarios only imaginable. “One of the problems that nurses have is that we are not able to turn the switch off — we’re still working even when we are not working. People in healthcare have a higher rate in suicide. This is the problem in healthcare that we are trying to work with,” Stinson said.

“We’re asking how we can help healthcare workers take better care of themselves and what we’re hoping to get from our research is an idea about what we can do in our curriculum to help future nurses. There is a need to better prepare nursing students for a nursing career without the loss of quality of life,” Stinson said.
Civil and Environmental Engineering Professor Dr. Qin Qian

The United States Environmental Protection Agency has awarded Dr. Qin Qian, Professor of Civil and Environmental Engineering, a total of $448,625 to use in the improvement of water quality in the Gulf of Mexico.

The EPA’s mission is to protect human health and the environment to ensure that Americans have clean air, land, and water. The agency will be funding Dr. Qian’s project titled, “Conjunctive Deployment of Distributed Stormwater Infiltration and Bioretention Infrastructures to Mitigate Flooding and Related Non-point Source Pollution in Beaumont and Port Arthur, Texas.” Two green infrastructure systems will be constructed — one at Lamar University and the other in Port Arthur.

“The outcome of this project can change the willingness to adopt, fund and implement green stormwater infrastructures at a large scale in Southeast Texas. This can inspire the next generation specializing in coastal flood resiliency,” said Dr. Qian. She hopes to extend this research project to national infrastructure databases and build educational and outreach programs. These outreach programs would include community involvement, such as K-12 students and teachers, under-represented groups, non-profit organizations, and local agencies.

Dr. Qian has always had an interest in green infrastructures and believes this project will create a better understanding of the ecosystem to allow people in Southeast Texas to work towards a pro-green future. The projected outcome of the project is to help the community understand how green infrastructures can reduce pollution and potentially mitigate the impacts of flooding events.

Dr. Qin Qian will be leading the project as principal investigator, along with Lamar University’s Chair and Professor of Civil and Environmental Engineering, Dr. Liv Haselbach as co-principal investigator. This research will include collaborations with engineers Dr. Yu Zhang, Associate Professor of Civil Engineering at University of Texas Arlington, and Dr. William Shuster, Chair and Professor of Civil and Environmental Engineering at Wayne State University.
LU establishes
CENTER FOR RESILIENCY

Lamar University has established a Center for Resiliency that was approved and funded by the 87th legislative session. The Center for Resiliency will focus on research, community outreach and teaching to support the body of knowledge surrounding disaster preparation, mitigation and recovery, especially following major storm events.

The Gulf Coast of Texas is subject to major flooding from rivers, storm surges, and record-breaking rain in addition to other disasters. Texas is also host to vital transportation corridors through its ports, rail and highway networks; which can be impacted by major flooding events. The region is home to important industries that are vital to the national economy’s health (i.e. petrochemical, agricultural, energy and telecommunications). During a recent 5-year period, the Southeast Texas region was declared a national disaster area which resulted in the closure of Interstate 10 four times and impacted the productivity of industry as well as the deployment of the Department of Defense assets. Flooding events in Texas have national consequences. In a single flooding event, it was estimated that the flooding events in Texas cost the US economy $4.5 billion per day.

“Managing before and during crises depends upon having up-to-date information and analytic capability, seeking to use the power of this timely information to predict what may happen or offer multiple scenarios for mitigation and response,” explained Liv Haselbach, Executive Director of the LU Center for Resiliency. “Resiliency is not only about responding once a crisis occurs, but also encompasses how its impact is mitigated, and how responders anticipate resource supply, timing, and deployment in advance of a crisis. Resiliency preparation requires the best assembly of people and real-time data, providing decision makers the tools they need to make more effective decisions prior to and during severe duress.”

The center presents a futuristic paradigm for higher education in Texas. While university services disseminate centralized information regionally, the Center for Resiliency provides a model for completing the circle, gathering regional information from numerous stakeholders, compiling, analyzing and then funneling the knowledge locally, regionally, statewide, and beyond. The center will help optimize funding to bring together the best assembly of people and channeling vital information.

LU initiated the Southeast Texas Flood Coordination Study in 2019 to address storm-related disaster concerns with a vision to be a permanent center serving as a communication conduit, geospatial and infrastructure data collaborative, economic and research resource, and educational outlet along the Gulf Coast. Participants included counties, river authorities, cities, drainage districts, industry, state agencies and federal agencies.
Dr. Philip Cole receives support from the NSF to advance understanding of fundamental structure of nucleons that make up matter of the visible universe. He will engage undergraduate physics students to work at nuclear physics laboratories in the US and Germany. The research and the associated learning experience aim to answering the very question on how matter is made and the transition of energy and mass inside atoms, the basic building blocks of our physical world. According to Cole, understanding how the strong force is generated inside the nucleus is one of the greatest intellectual challenges facing nuclear physicists today because the spatial scale of the force is so small that so very little is really known about the internal structure of protons and neutrons.

Dr. Xingya Liu receives funding from the NSF to exploit the “upper layer spectrum sensing and directionality” to gain access to the hidden spectrum available for communication and data transfer. This research has significant impacts on exploration in emerging technologies with dynamic spectrum access, such as vehicular networks, mobile health, and opportunistic interconnections of heterogeneous wireless networks. Upper layer networking techniques are incorporated to discover and access an additional available spectrum hidden from physical layer detection. Students will be engaged in innovative demonstrations to explore the complex concepts of communications and networking through inductive learning and hands-on projects.

Dr. Zhe Fan received an Engineering Research Initiation Grant from the NSF to develop dual phase complex concentrated alloys that can withstand high temperature and corrosive conditions. His work advances the understanding on the multivariate relationship among high temperature, mechanical behavior, deformation mechanisms and interface effects. The knowledge of such physical properties has a wide range of applications in material development and selection, particularly in remote locations with harsh environmental conditions. This project will also offer research opportunities to undergraduate and graduate students along with faculty collaborations from both LU and scientists from external institutions.