For Immediate Release

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Industrial Engineering Healthcare Initiative Achieves University Center Designation

Manhattan, Kan. - Helping health care providers and systems operate more efficiently and improve quality of patient care has been the focus of an initiative spearheaded by faculty at Kansas State University’s Industrial and Manufacturing Engineering Department (IMSE). Now this successful effort has gained university Center status, providing the opportunity for better recognition and more successful cooperation with health care providers.

“We have developed a significant number of quality connections with major health clinics and health organizations across Kansas,” said David Ben-Arieh, IMSE professor who, along with associate professor Chih-Hang (John) Wu has been leading the efforts that are now part of the newly designated Health Care Operations Resource Center. “However, to date our efforts are all reflected back to the individuals involved and to mostly one academic department.”

“Center designation status gives clients and potential funderers an indication of university commitment to this effort and provides project stability and permanency for our efforts,” Ben-Arieh continued. “With this status we hope to also engage faculty from across the university to expand the scope and reach of projects, creating advances in numerous areas of research and the opportunity for new funding sources.” With time and sustainable funding levels Ben-Arieh and Wu hope to seek Regents Center designation.

Centers are designated by the Provost’s office and are part of K-State’s efforts to pursue environmental, social, and economic sustainability in every major area of the university. Centers help connect university faculty and staff who are involved in interdisciplinary, systemic work and research.

Ben-Arieh and Wu’s focus on health care operations began in 2007 and since that time the department has completed 14 projects with clinics and hospitals across the state. The assignments have ranged from facility planning and optimization of medical supply ordering for small rural hospitals to emergency room workflow improvements and information systems design for large urban medical centers. Clients have included Mercy Regional Health Center, Manhattan; Hays Medical Center; Neosho Regional Medical Center, Chanute; and KU Medical Center, VA Medical Center, and Children’s Mercy Hospital, Kansas City.

An innovative area of research is modeling the spread sepsis through the human body using system dynamics and computer simulation. The aim of this research, done in collaboration with the University of Kansas Medical Center, is to develop an assessment tool that medical staff can use when making care
decisions, particularly for those at higher risk of developing septic shock. This would prove especially useful for small hospitals which are generally not well equipped to deal with acute sepsis, providing the time necessary to transport the patient to a larger facility for care. Sepsis is a potentially serious medical condition in which the bloodstream is overwhelmed by bacteria. In the United States there are approximately 750,000 new sepsis cases each year with at least 210,000 fatalities.

According to Wu, applying industrial engineering approaches to untraditional projects, such as sepsis and other similar efforts is a primary reason why the Health Care Operations Resource Center is needed. “Relating our efforts to an engineering department actually creates skepticism when researchers, medical professionals, and administrators are first introduced to our services,” he said. “We believe the center designation will allow us to overcome this difficulty and open doors to new collaborations.”

“Today, more than ever, there is a recognition among most Americans, regardless of their political leanings, that our health care industry needs to operate more efficiently to reduce costs, provide consistently high quality of care, and maximize patient satisfaction,” Wu said. “The purpose of K-State’s Health Care Operations Resource Center is to help do just that.”

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