



DR. GUL KREMER: USE-INSPIRED BASIC RESEARCH: PROGRESS THROUGH MULTIDISCIPLINARY AND INTERDISCIPLINARY COLLABORATIONS

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Although most scholarly training is undertaken in single disciplinary communities, the complexity of contemporary problems requires input from disciplines with both close and less apparent connections to the problems for engineered solutions to be comprehensive and to be most relevant to the use context. Despite this need, progression towards multi- and interdisciplinarity in research and education is slow because it requires leaving zones of comfort and cultivating openness to continuous learning amongst researchers. In this talk, various benefits of use-inspired research will be discussed through examples of research in design, manufacturing, healthcare, cognition domains. Multi- and interdisciplinarity, use of authentic data, and difficulties and benefits of collaborative research will be discussed in relation to product/system design and development theory, sustainability, innovation, and product and supply chain research domains.

Gül E. Kremer is a Professor and C.G. “Turk” and Joyce A. Therkildsen Chair of Department of Industrial and Manufacturing Systems Engineering at Iowa State University. Before joining ISU in 2016, she has served in several leadership roles within Penn State, including Chair of the Engineering Faculty Council, Engineering Caucus Leader, Chair of Engineering Curriculum Committee and Chair of the University Planning Committee. Dr. Kremer has degrees in industrial engineering from Yildiz Technical University, an MBA from

Istanbul University and a PhD in Engineering Management from Missouri University of Science and Technology. She has been a National Research Council-US AFRL Summer Faculty Fellow in the Human Effectiveness Directorate from 2002 to 2004, and a Fulbright Scholar (2010-2011). She served as a Program Director in the National Science Foundation’s Division of Undergraduate Education between 2013 and 2016. Dr. Kremer’s research interests include applied decision analysis to improve complex products and systems, and engineering education. The results of her research efforts have been presented in various publications, including 3 books and more than 290 refereed publications. Seven of her papers have been recognized with Best Paper awards.

She is a Fellow of the American Society for Mechanical Engineers (ASME), and a senior member of the Institute of Industrial Engineers (IIE). She has served as the Chair of Design Education and Design for Manufacturing and Lifecycle Technical Committees of the Design Engineering Division of ASME. She has given several keynote talks on enhancing creativity in STEM students and sustainability in product and system engineering, and has served in the scientific committees for many conferences. Currently, she is serving in the editorial boards of Journal of Mechanical Design, Advances in Engineering Education, International Journal of Precision Engineering and Manufacturing and Journal of Industrial & Production Engineering.

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