

Establishing International Partnerships for Mechatronics Research and Scholarship

P.I. #1: Dr. Chan Ham
Mechatronics Engineering
SP College of Engineering & Engineering Tech

P.I. #2: Dr. Kevin McFall
Mechatronics Engineering
SP College of Engineering & Engineering Tech

P.I. #3: Dr. Ying Wang
Mechatronics Engineering
SP College of Engineering & Engineering Tech

P.I. #4: Dr. Margaret Lowder
Mechanical Engineering
SP College of Engineering & Engineering Tech

This project aims to establish partnerships for high quality Mechatronics research and education projects in which international collaboration catalyzes higher levels of engagement in the Mechatronics Engineering community. As KSU has the largest Mechatronics program enrollment in the US, the proposed project will clearly position KSU to be the leader nationally, and would enable building a global initiative and reputation in this field. While Mechatronics is an emerging field in the US, the program is quite popular in Europe and Asia [1]–[7]. Because Mechatronics programs are already mature in Europe and Asia, establishing international collaboration is vital for building the reputation of the KSU program. As Mechatronics Engineering expertise and infrastructure advances across the world, it is expected that KSU will increasingly benefit from international collaboration by remaining globally engaged. Moreover, the Mechatronics Department is awaiting review of a \$1.2 million grant proposal with NSF to build a reconfigurable plug-and-play mechatronics platform to support research in advanced robotics and manufacturing. Therefore, the Department’s ambitious plan for growth in research related to the manufacturing industry would be bolstered by the funding of this proposal through establishment of international partnerships for the sharing of best-practices and collaboration on research projects.

The ambition of the Mechatronics Engineering program at KSU is to grow beyond solely an undergraduate program, with a M.S. program awaiting approval by the Board of Regents. One concentration in the proposed M.S. program is Manufacturing and Mechatronics Design, where the intention is drive a research agenda closely connected to automation and manufacturing industries. In fact, the Mechatronics Engineering Department is awaiting review of a \$1.2 million grant proposal with NSF to build a reconfigurable plug-and-play mechatronics platform to support research in advanced robotics and manufacturing. The Department’s ambitious plan for growth in research related to the manufacturing industry would be bolstered by the funding of this proposal through establishment of international partnerships that increase collaboration on research projects. The proposed project promotes research and education at the leading edge of Mechatronics Engineering by facilitating partnerships with other institutions, both domestic and international, and fostering an institutional capacity for international collaboration. The result

would be high-reward activities and potentially transformative ideas that maintain KSU globally competitive.